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Essay on difficult labours
In 3 parts —
Essay on Preternatural labours

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# AN ESSAY ON DIFFICULT LABOURS.

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PART FIRST.

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LICENTIATE IN MIDWIFERY,
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# *Difficult Labours.*

## FOUR ORDERS.

### ORDER I.

Labours rendered difficult from the inert or irregular action of the *Uterus.*

### ORDER II.

Labours rendered difficult by the rigidity of the parts requiring dilatation.

### ORDER III.

Labours rendered difficult by disproportion between the Dimensions of the *Pelvis* and the head of the child.

### ORDER IV.

Labours rendered difficult by diseases of the soft parts.

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# CLASS SECOND.

## DIFFICULT LABOURS.

### CHAPTER VII.

#### SECTION I.

FROM this hiſtory of a natural labour, and from the tenour of what has been advanced in the preceding chapters, it appears that parturition is a proceſs of the conſtitution which generally, requires no aſſiſtance; and that when it is natural, it ſhould be ſuffered to have its own courſe, without interruption; for the very ſame reaſons, which render all interpoſition with other natural operations, unneceſſary and improper. Whence then ariſes the neceſſity or expediency of eſtabliſhing midwifery as an art for the relief of the human ſpecies? or in what reſpects has ſociety profited by the eſtabliſhment? Certainly neither on the preſumption that women are by nature deſ-

titute of thoſe powers, which at the time of parturition, are in all other creatures generally equal to the exigences of their ſituation; nor when thoſe powers are fairly exerted, every cauſe producing its effect, in the order and in the manner which the parts by their conſtruction were framed to perform and undergo; nor, when there exiſt no uncommon impediments, by which the effect to be produced by the operations of the natural cauſes, may be obſtructed. But as the aid of medicine becomes neceſſary, when from ſome defective, or irregular exertion of the native powers of the conſtitution: or from ſome adventitious cauſe of obſtruction, or from ſome infirmity in the conſtituent parts of any of the organs of the body, the functions of any part may be ſuppreſſed, impeded, or in ſome way rendered irregular, to the detriment of the part, or of the conſtitution; in like manner, the aſſiſtance of the art of midwifery may be required for the relief of irregularities or difficulties in the act of parturition.

In all creatures in which there is a difference of ſtructure, there muſt be a difference in the conduct of every function of the conſtitution, which is at all connected with, or dependent upon ſuch variety in ſtructure; and a difference in the proceſs of any function, eſpecially if that ſhould be rendered more complex, may become the prediſpoſing

cauſe

cauſe of ſuch deviations from the natural courſe of the action, as may require the aſſiſtance of art: though the very ſame function, proceeding in a natural way, might be void of danger, and require no aſſiſtance whatever. The knowledge of the peculiarities of the human ſpecies, or of the ſpecific circumſtances in which women differ from all other female creatures, may therefore be conſidered as affording the only juſt and true baſis on which the practice of midwifery ought to be founded. Before we proceed then, to an enquiry into the particular caſes which may demand the aſſiſtance of art, or determine upon the manner in which that art can be exerciſed with the greateſt advantage, a review of thoſe peculiarities will be neceſſary and uſeful.

The firſt and moſt obvious circumſtance in which women differ from all other female creatures, is in the erect poſition of the body; of the conſequence of which, with regard to the *pelvis*, and ſome diſeaſes to which women are particularly liable, notice has been already taken*. In the original conſtruction of the *pelvis* in quadrupeds, with a view to parturition, there ſeems to be a neceſſity of regarding its capaciouſneſs alone; becauſe if even more than ſufficient ſpace were provided for the paſſage



* See the Introduction, Chap. i. Sect 5. and Chap. ii Sect. vii.

of their young, no attitude into which they put themſelves, or into which they can be compelled by any accident, during utero-geſtation, would ſubject them to danger on this account. But from the erect poſition of the human body, if the cavity of the *pelvis* had borne the ſame relative proportion to the ſize of the *fœtus* as in quadrupeds, women would have been liable to many and great inconveniencies; as the weight of the *ovum* and enlarged *uterus* muſt, in advanced pregnancy, have been occaſionally ſuſtained by the ſoft parts; which becoming thinner and leſs equal to that office, according to the advancement, premature labour would often have been brought on. For this, and perhaps ſeveral other leſs obvious, though equally important reaſons, which it is not neceſſary to enumerate, there undoubtedly is a greater difference between the dimenſions of the cavity of the *pelvis*, and the head of the human *fœtus* at the time of birth, than in any animal; and this difference muſt eventually become the cauſe of more painful and difficult labours.

As there is no effect throughout nature without ſome ſufficient cauſe, as well as ſome wiſe end, perhaps the moſt ſatisfactory proof of the exiſtence of this diſproportion, may be drawn from the conſtruction of the head of the human *fœtus*, which being incompletely oſſified at the time of birth, is capable of having its form changed, and its ſize diminiſhed,

diminiſhed, without any injury from the compreſſion. Theſe effects are produced in ſome degree in almoſt all labours, but very remarkably in thoſe which are compleated with difficulty; for in ſuch, the ſutures not only accede, but the edges of the bones will ride over each other in a very extraordinary manner. From this original and comparative relation between the cavity of the *pelvis*, and the head of the *fœtus*, women are naturally more liable to difficulties in parturition, than animals; which difficulties may be eſteemed as an allay for the advantage obtained by the erect poſition: or becauſe their offspring were ſo framed as to be capable of greater excellencies than animals; which excellencies may depend upon this conſtruction of the head. Without this incomplete oſſification, great numbers of children muſt have been inevitably deſtroyed at the time of birth, or the parents muſt have died undelivered. Nor is this proviſion only ſufficient to anſwer the end of mitigating thoſe evils to which women are by their ſtructure neceſſarily liable; but it is generally equal to the relief of thoſe which are occaſioned by morbid alterations in the ſize of the cavity of the *pelvis*.

2. The intercourſe between the parent and *fœtus*, while it abides in the *uterus*, though generally alike in all viviparous animals, has ſome variation in each claſs. The *ovum* is conſtructed for a temporary uſe, but in a moſt beautiful and perfect

perfect manner for the purpoſes for which it was ordained. The variations may exiſt either in the *uterus* or *ovum.*

In the *uterus* of the different claſſes of animals, the moſt obvious variety is in the form. Animals might, perhaps, be nearly as well arranged, and the claſs to which they belong as well determined by the form of the *uterus*, as by any other external or internal mark. Such as are the form and ſtructure of the *uterus*, ſuch will be the properties, and of courſe in every animal in which there is a difference in form, there will be ſome correſponding difference in the circumſtances of parturition; ſo that it is probable we ſhould not, on enquiry, find an exact likeneſs in the parturition of any animals which vary either in *genus* or ſpecies.

The *uterus* in all animals may be conſidered as the bed or ſoil in which the *fætus* is preſerved and nurtured, till it arrives at a ſtate of perfection, and by which it is ultimately expelled. For the completion of theſe ends, there muſt be a perfect coincidence between the nature of the *fætus* to be preſerved and nurtured, and the properties of the *uterus*, which performs thoſe offices. The varieties in the form of the *uteri* of different animals are progreſſive, from thoſe of the loweſt tribe, to the human, which when un-impregnated, is pyramidal, becoming more oviform accord-

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ing to the degree of its diſtention. On the form not only the accommodation of the *fœtus* may depend, but the term of utero-geſtation alſo; or the power which every individual *uterus* has of bearing diſtention only for a certain time. Yet if this were allowed, it would ſtill remain to be enquired why an *uterus* of one form, became capable of bearing diſtention for a longer time than that of another.

Complicated with, or dependent on form, is the ſubſtance or thickneſs of the *uterus*; and on this again the power which the *uterus* is capable of exerting at the time of parturition. The *uterus* in women is of greater thickneſs, and of a firmer texture in the un-impregnated ſtate, than in animals; and in theſe it is ſaid to become ſomewhat thinner, in proportion to its diſtention; whereas in women it retains its thickneſs, or becomes rather thicker during pregnancy. It appears that by this thickneſs is gained the medium of that power which is exerted by the human *uterus* in the act of parturition, and without which women could not in many caſes have been delivered. But if there had been occaſion in animals, for the exertion of an equal degree of power, they could not have been delivered; as there is not in them a medium by which ſuch power could have been exerted, and the form of the *uterus* would alſo have been unfavourable for its operation.

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This thickneſs of the *uterus*, notwithſtanding its diſtention, is chiefly preſerved by the enlargement of the arteries, veins and lymphatics, and their enlargement is moſt conſpicuous about that part to which the *placenta* adheres. The quantity of blood circulating in the human *uterus* and the adjacent parts, during pregnancy, is very great; and it probably undergoes ſome preparatory change, before it is conveyed to the *placenta*; ſo that it may be preſumed, that the *uterus* performs the office of a gland preparing the blood, before it is conveyed to the *placenta*, for a more perfect ſecretion of whatever is to be ſeparated from it, for the uſe of the *fœtus*; as well as of a containing part of the *ovum*. On the quantity of blood may alſo depend the action of the *uterus* at the time of labour; for if the *placenta* be looſened before the child is born, and the blood has a free diſcharge, there is ſeldom any efficacious action, though the *uterus* may be, in all other reſpects, in a ſtate of perfect health.

In our preſent enquiry, the principal part of the *ovum* which deſerves attention, is the *placenta*, and of this there is an endleſs variety in the different kinds of animals, according to the nature and properties of each parent and the offspring. In the *belluæ*, the office of the *placenta* is performed by the whole membrane of the *uterus* being thickened,

ed, and becoming proportionably vaſcular; in the *pecora* it is divided into many lobules, compoſed of long and vaſcular fibres, called *cotyledons*, affixed to as many temporary eminences of the internal ſurface of the *uterus*; in the *feræ* it ſurrounds the *uterus* like an internal belt; and ſo on, with great variety, in the different claſſes of animals. But in the human ſpecies, the *placenta*, as the word implies, is in one maſs, of a circular form, flattened, and becoming gradually thinner towards the edge, adheres to the *uterus* with a broad ſurface. When this is ſeparated, the orifices of many of the large veſſels of the *uterus* are opened, and a conſiderable quantity of blood is immediately diſcharged, far beyond what could poſſibly be loſt in any animal, though of a much larger ſize; and if the *uterus* was to continue diſtended, the orifices remaining open, there would be a dangerous or a fatal hemorrhage. For not only the blood circulating in the *uterus* would be immediately poured out of its veſſels, but all that which is contained in the body might be drained, and the patient ſpeedily periſh, if ſhe were not relieved by art; and yet no animal ever was or could be deſtroyed, or brought into danger by this circumſtance. For the ſame reaſon alſo, the uterine diſcharges continue a longer time, after delivery, in women than in animals; the irregularities and interruption of which may become the cauſes of diſeaſe, and are proofs

that independent of faſhion or cuſtom, there is a neceſſity that women ſhould, for their own ſafety, be ſeparated from ſociety for a certain time after delivery. On account alſo of the form of the *uterus*, and the peculiarities of its action; of the bulk of the *placenta*, and the manner of its connection, it is more likely to be retained in women than in animals; and its retention may be followed with worſe conſequences.

3. In the conſideration of this ſubject, the paſſions of the mind are of too evident importance to eſcape attention. On a variety of occaſions, theſe, in human beings, (to a certain degree, in a natural ſtate, and much more when heightened by all the refinements and perverſions of ſociety,) are found to be capable of producing the moſt extraordinary effects; by ſuppreſſing or ſuſpending for a certain time the action of any, or of all the powers of the conſtitution; by occaſioning them to act with irregularity, and at improper times; and in ſome caſes alſo by exciting them to act with too great energy and force. But animals ſuffer neither from the recollection of the paſt, or dread of the future; and acting according to their nature, the good or evil of the preſent moment, to them appears to be the whole of their exiſtence. In the paſſions we may then diſcover ſources of danger, and diſturbance in the parturition of women, from which animals are exempt; and the obſervation is

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ſo general, that care is univerſally taken to prevent the communication of any intelligence to women in, or about to be in labour, which can either diſtreſs, or much agitate them. To this principle or cauſe, may alſo be referred, the many nervous affections to which women are ſubject in the ſtate of childbed, and for ſome time after they are delivered, when the animal powers are reduced, and the ſenſations quickened. But it muſt be allowed, that the greater degrees of theſe evils, are not to be attributed to phyſical infirmities, but to moral errors.

A conſideration of their unimpaired conſtitutions and leſs exquiſite feelings, will likewiſe diſcover to us the reaſon why the lower orders of women have more eaſy and favourable births than thoſe who live in affluence; the frame of whoſe bodies, and the ſenſibility of whoſe minds are altered, and often depraved, by the indulgence of parents, when they are infants, and by their own luxury, when they are adults. The conſtitutions of thoſe who are hardy, are better able to bear the common accidents of child-bearing, and they ſuffer leſs becauſe they have leſs feeling and apprehenſion. When the *Egyptian* midwives were charged before *Pharaoh* with diſobedience to his orders, becauſe they preſerved the lives of the *Hebrew* children, they pleaded in their excuſe, that the *Hebrew* women were not like the

*Egyptian*, " they were lively, and were delivered before they (the midwives) could come to them." The *Hebrew* women were ſlaves, accuſtomed to labour and hard living; but we may preſume, that the *Egyptians* ſuffered all the evils ariſing from indolence and luxury. The ſame obſervation will alſo explain the reaſon of many of thoſe evils which women in the higher ranks of life ſuffer; particularly why fewer women die in child-bed in the country than in cities, where even thoſe of the lower claſs, too often plunge into groſs indulgences, and therefore ſuffer the ſame or a worſe fate, than the delicately luxurious.

4. We are laſtly to conſider, that women are by conſtitution and by habits of education and living, ſubject to diſeaſes to which animals are not liable; which diſeaſes become of great conſequence, by creating new cauſes of difficulty, or by increaſing natural evils, or by weakening thoſe powers by the operation of which, difficulties ſhould be overcome. All theſe diſeaſes it is unneceſſary, and perhaps impoſſible to enumerate; but that, which by affecting the bones in general, and thoſe of the *pelvis* in particular, has the greateſt influence on labours, is deſerving of eſpecial notice.

By the *Rachitis* is not only underſtood the diſeaſe of children properly ſo called, but the *oſteo-ſarcoſis*, or *mollities oſſium* alſo, this being the

the only difference between them; that in the former, the bones, in the infantile ſtate, are prevented from acquiring ſuch a degree of firmneſs, as will enable them to ſuſtain the weight of the incumbent body, without yielding and becoming diſtorted; which diſtortion may remain to adult age. But, in the latter, the bones having been properly oſſified, become ſoft again, in conſequence of the abſorption of the oſſific matter, by which the moſt extreme degrees and frightful kinds of deformity have been ſometimes occaſioned. From diſtortion produced by either of theſe cauſes, the cavity of the *pelvis*, which in a natural ſtate, ſhould meaſure upwards of four inches, in its narroweſt limits, may be reduced to two, or even to leſs than one inch; by which the reciprocal proportion between it and the head of the *fœtus*, is perverted or deſtroyed, and it is abſolutely impoſſible for the latter to paſs through the former. This ſoftneſs and conſequent diſtortion of the bones, being peculiar to, or infinitely more frequent in the human ſpecies, occaſions difficulties at the time of parturition, from which animals are almoſt univerſally free. Even if animals were liable to it, from their poſition, and the diminiſhed weight which the *pelvis* in them ſupports, it could not produce the ſame kind or degree of effect. From the frequency of this diſeaſe, in cold and unwholeſome climates, or in crouded

crouded cities, where the employments and manners of the human race, weaken the conſtitutions of the inhabitants; and from its rarity in warm and healthy ſituations, with ruſtic employments and ſimple manners, we may conclude, though we retain and act upon the ſame principles, that the events of the practice of midwifery muſt be different in different places, and that the authority of the beſt writers muſt in ſome meaſure be local.

On account of the originally relative ſmallneſs of the *pelvis*, of the ſtructure of the *uterus* and *placenta*, of the paſſions, and of the diſeaſes to which mankind are by nature, or by the cuſtoms of ſociety, peculiarly liable, the cauſes of many difficulties and dangers which attend parturition, will be evident; and of courſe the neceſſity of eſtabliſhing midwifery, as an art, for the relief of women.

But to render theſe obſervations, with others, diffuſed through this eſſay, of greater uſe, I ſhall endeavour to reduce them into propoſitions in the following order:

1. All viviparous animals bring forth their young with pain.

2. The degree of pain which they ſuffer, will depend upon the degree of their ſenſibility, natural or acquired, and upon the difficulty with which they bring forth their young.

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3. The difficulty with which they, in general, bring forth their young, depends upon their conſtruction.

4. But by their conſtruction, they are alſo endued with powers capable of overcoming all the difficulties to which ſuch conſtruction generally renders them liable.

5. The proceſs of parturition in animals, is therefore to be eſteemed a natural proceſs, requiring no other aſſiſtance, than the exertion of thoſe powers which depend upon their conſtruction.

6. The conſtruction of the females of the human ſpecies is different from that of the females of any order of animals.

7. The conſtruction of the females of the human ſpecies is ſuch, as to render them unavoidably ſubject, in general, to greater pain and difficulty in parturition, than the females of any order of animals.

8. But by the conſtruction of the females of the human ſpecies, and by the original formation of the head of the human *fætus*, proviſion is made for overcoming all the difficulties to which the peculiarities of their conſtruction may render them generally liable.

9. With regard to the act of parturition, when natural, women are therefore to be eſteemed on a ſimilar footing with animals.

10. But

10. But as women are by their conſtruction, and by the cuſtoms of ſociety, ſubject to diſeaſes and accidents, which increaſe the natural difficulties and danger attending their parturition, from which the females of every order of animals are free;

11. It will follow, that the occaſions which require aſſiſtance at the time of parturition, muſt, of neceſſity, occur more frequently in women, than in the females of any order of animals.

From theſe premiſes, the expediency and neceſſity of eſtabliſhing midwifery as an art for the relief of the human ſpecies, will appear.

## SECTION II.

MANY general circumſtances and appearances have been mentioned, and conſidered as the preſumptive ſigns of difficult labours; and though I apprehend, that much ſtreſs cannot be laid upon them with a view to practice, it will not be improper to enumerate them. If they were certain and invariable, it would be incumbent on us to underſtand the degree and extent of their influence, and to apply ourſelves to the diſcovery of ſome means, by which we might prevent or remedy the evils we foreſaw.

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The kind of labour which any particular woman will probably have, has been ſuppoſed to depend, in ſome degree, upon her complexion. Women with very fair or very dark complexions, have been conſidered to be equally ſubject to difficulties or inconveniencies in parturition; whilſt thoſe of the intermediate ſhades were ſuppoſed to have advantages in their favour. Now, as far as any particular complexion can indicate a general ſtate of health, this obſervation is reaſonable and true, with reſpect to labour; thoſe who have the beſt health, uſually paſſing through that proceſs in the beſt and ſafeſt manner. But as thoſe who are of complexions in either extreme, may have perfect health, any inference drawn from this principle, muſt be liable to many exceptions.

By the general ſize of the body, it has been conjectured that we might foreſee whether an enſuing labour would be eaſy or difficult. This obſervation will ſtand upon the ſame ground with the foregoing; that is, it may hold good, as far as one certain ſize may be found beſt ſuited for the performance of all the functions of the body, and the purpoſes of life. Thoſe who are very tall, are not often very active, or capable of bearing much fatigue; and thoſe who are very ſhort, may have become deformed in conſequence of ill health in the early part of their lives: Thoſe on the con-

trary, who are of a middle ſize, or rather below it, being preſumed to be more generally healthy, and beſt adapted to the common occaſions of life, may be expected to have the beſt labours, as they have ſufficient power, and a readier diſpoſition to act.

The habits of life, and the diſpoſitions of patients, have been ſuppoſed to have ſome influence in forwarding or retarding labour. Thoſe women who are indolent in their habits and diſpoſitions, perform all the functions of the conſtitution in a ſlow and indolent manner, and of courſe may be expected to have tedious labours. But thoſe who are of lively diſpoſitions and active habits, being in the conſtant exerciſe of their powers, have not only theſe powers ſtrengthened, but greater energy alſo; and the activity of the parts concerned in parturition, will partake of that of the body in general.

The regularity, together with the eaſe or difficulty of a labour, may, in ſome meaſure depend upon the ſtrength or weakneſs of the faculties of the mind; but this muſt be a very general obſervation, and can only hold good in that extenſive way in which it is admitted in other occurrences of life, in which weakneſs of judgment may fancy evils that do not exiſt, or add to the weight of thoſe which are unavoidable.

Labours are generally affected by the climate

in

in which women live. In hot climates, all natural labours are ſaid to be more eaſy than in thoſe that are cold; probably, becauſe the diſpoſition to relax and dilate, is more perfectly aſſumed. But in cold climates, from the acquired rigidity and firmneſs of the parts, there will be occaſion for greater exertion, though there may be greater power; and if the labours are ſlower, perhaps the feelings are leſs, and they may terminate with equal ſafety, and without greater ſuffering. In the ſame climate there will generally be ſome variations in labours at different ſeaſons; and I believe it is true, that in this country, women have eaſier labours in ſummer than in winter.

Such obſervations might be extended to a greater length, and diſcuſſed with more nicety; but they can hardly eſcape the notice of an attentive man, and he that is prudent will not eſteem them of too much value.

## SECTION III.

WITHOUT ſome accuracy of diſtinction, it will not be poſſible to acquire ſuch a knowledge of *Difficult* Labours, as will enable us to conduct women through them ſafely and properly; and it is therefore neceſſary, in the firſt place, that we ſhould define what is meant by the term. We will then ſay, that every labour ſhall be called *difficult*, in which the head of the child preſents, if the labour is protracted beyond twenty-four hours *.

This definition, which is chiefly taken from time, is liable to ſome objections, as there may be more pain endured, and greater difficulties ſurmounted by one woman in ſix hours, than by another

* Fit partus difficilis et laborioſus, quod nec modo neque ordine debito res peragatur, aut pravis aliquibus ſymptomatis impediatur. HARV. *Exercit. de Partu.*

Dicitur autem partus ille difficilis, qui cum fœtûs vel matris periculo accidit; vel quia cum graviſſimis fit ſymptomatibus, vel quia tardius procedit, ita ut longo tempore prematur mulier—*Roderic. a Caſtro Luſitan.*

Partus difficilis appellatur, qui debitas atque ordinarias naturæ leges non ſervat, ſed longius tempus inſumit, et dolores ſubito vehementiores, aliaque ſymptomata graviora comitantia habet—*Riverii Prax. Medic. De Partu difficili.*

Fœtûs maturi enixus laborioſiſſimus. *Linnæi Noſologia.*—

other in twenty-four; but on the whole, it will be found to apply in an advantageous and unexceptionable manner in practice. It will, in particular, afford a remedy for impatience, and guard the practitioner, in some measure, from premature attempts to give assistance, without incurring the danger of those evils which might be apprehended from too long delay.

Of those labours which come under the denomination of *Difficult*, there is an almost endless variety in their causes or their degree. Some are occasioned by one cause alone, but more frequently by a combination of various causes; though one may be more obvious and important than the rest*. For the uses and purposes of practice, it is not enough to say, that all labours are rendered difficult, either from the greatness of the obstruction, or by the insufficiency or debility of the power by which the obstruction should be overcome; or, that some depend upon the mother, and others upon the child. Such distinctions are too general. The particular cause of every indi-

* As many causes concur in the production of compound effects, we are liable to mistake the predominant cause, unless we can measure the quantity of the effects produced, compare them with and distinguish them from each other, and find out the adequate cause of each single effect, and what must be the result of their joint action.

*See* Dr. DESAGULIER's *Preface.*

vidual difficult labour, ſhould be pointed out, as well as the conduct which each ſpecific cauſe may require. It was before obſerved, that there are advantages to be gained by experience, of which no doctrine or words can convey an adequate idea; and thoſe who are in poſſeſſion of experience, ſeldom bend to the rules of others. But it is of the greateſt conſequence to thoſe who have not yet gained experience, that they ſhould acquire the habit of regiſtering and arranging the particular knowledge they may have an opportunity of gaining, into regular order, or they will loſe the benefit of it; as it will either be loſt, or recollected with difficulty, when they want to apply an obſervation made in one caſe to the exigencies of another. To prevent theſe defects, we will divide all Difficult Labours into four Orders or Kinds, and then enumerate the principal cauſes of each Order. As the knowledge of cauſes, and the management or removal of effects or difficulties, ſhould go hand in hand, the methods to be uſed for the relief of theſe, will at the ſame time be pointed out.

In the *Firſt* Order will be included all thoſe labours which are rendered difficult from the inert or irregular action of the *uterus*:

In the *Second*, thoſe which are occaſioned by the rigidity of the parts to be dilated:

In

In the *Third*, thoſe which are occaſioned by diſproportion between the dimenſions of the *pelvis* of the mother and the head of the child :

In the *Fourth*, thoſe which are rendered difficult by diſeaſes of the ſoft parts.

Under one or other of theſe Orders, every Difficult Labour may be arranged.

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## SECTION IV.

## ON THE FIRST ORDER,

OR,

*Thoſe Labours which are rendered difficult from the inert or irregular Action of the Uterus.*

THE action of the *uterus*, by which every child muſt be expelled, is accompanied with pain proportionate to the force and to the reſiſtance made. But as this action may become imperfect, irregular, or inſufficient for the purpoſe of expelling the child, we ought to be acquainted with the cauſes of ſuch imperfection, irregularity, or inſufficiency. Of theſe cauſes there is,

1. *The too great diſtention of the uterus.*

It was formerly believed, that the *uterus* was diſtended mechanically, by the increaſe of the

*ovum*

*ovum* contained in it; and with this opinion, it might be concluded, that either from the ſize of the child, or the quantity of waters, the *uterus* might be brought into a ſtate ſimilar to that which takes place in the bladder; which, when diſtended beyond a certain degree, loſes all power of action. But later obſervations have proved, that the impregnated *uterus* is not diſtended by its contents, but by the operation of a principle which it acquires in conſequence of pregnancy; which principle ceaſes to act at the concluſion of the term of utero-geſtation, and is ſucceeded by another directly contrary, that of expulſion *.

But though the *uterus* cannot be diſtended beyond its power of action, it was obſerved, from the ſlowneſs and ſmallneſs of the effect of the firſt pains of labour, that the power exerted by the *uterus*, is generally ſuited to the ſtate of the parts, and the parts to the *uterus*, with a wonderful co-incidence. Yet as every principle in nature may alter or fail, ſo that of the diſtention of the *uterus* may prevail to ſuch a degree, or may continue ſo long a time, that its poſſible force ſhall be weakened, and its energy leſſened; and this ſeems to be proved, not only by the ſlackneſs of the pains in the beginning of all labours, eſpecially in thoſe caſes in which

* See the Introduction, Chap. iv. Sect. x.

which there are two or more children, but by the increaſe of that action, when part of its contents are evacuated. It is ſtill to be recollected, that the *uterus* cannot be diſtended beyond its power of action, though when greatly diſtended, it is only capable of ſlow and feeble action, which is however preparatory to that which is ſtronger. Feebleneſs of action, from diſtention, is not then an object of art; and it is perhaps beyond the influence of any earthly power to give to the *uterus* its native or genuine diſpoſition to act. Human art may put or preſerve the conſtitution in a ſtate fitted for ſuch action, or it may remove any impediments to its effect; but the principle is wholly independent of the will of the patient, or the ſkill of the practitioner. When therefore the pains of labour are feeble in the beginning, as no harm can ariſe from this cauſe, either to the mother or child, except that the former is under the neceſſity of bearing them for a longer time, though on the whole, perhaps, not in an increaſed degree; and as the methods adviſed and practiſed for the purpoſe of accelerating labours rendered tedious from this cauſe, are either immediately injurious, or may lay the foundation of future miſchief to one or both, we may with ſafety and propriety leave the buſineſs entirely to its own courſe without any interpoſition. Even when the labour has made con-

 ſiderable

ſiderable progreſs, and there has been reaſon to expect that it would be concluded in a ſhort time, there may be a ſuſpenſion of the action of the *uterus* for many hours, without any miſchief or hazard, as experience often ſhews, though the cauſe of ſuch ſuſpenſion may not be obvious to, or explicable by us.

Immediately on the acceſſion of labour, it has been the cuſtom to confine women to their beds, or to ſome particular poſition, on the preſumption that it would be thereby rendered more eaſy than in any other. By ſuch conduct, expectations of a ſpeedy delivery are often raiſed; and when theſe are baulked, the mind of the patient is diſturbed, and then the proceſs becomes irregular. But it will always be found more comfortable and uſeful to leave the patient to her own choice in theſe matters, and her inclination will be a better guide than any other. Time is the ſafeſt and generally the only remedy for lingering and tedious labours from this cauſe, and the patient will often find relief, either by walking or ſtanding, or chuſing that poſition which ſhe herſelf prefers, becauſe ſhe will inſtinctively ſeek that which is proper. However in many ſituations of this kind, the frequent exhibition of emollient clyſters is of ſervice; and when the labour is far advanced, in ſome caſes in which the action of the *uterus* is very feeble and ſlow in its

returns,

returns, as if it were unwilling to come on, a clyſter rendered ſtimulating by the addition of one ounce of culinary or cathartic ſalt, will often rouſe the dormant powers to action, and the labour will be ſoon compleated *.

2. *Partial action of the uterus.*

It was obſerved, that previous to labour, the *uterus* commonly ſubſided lower into the *abdomen*, and that the more perfect this ſubſidence was, the more kindly would the labour probably be; becauſe the *uterus* would act with more advantage. But in ſome caſes, the *fundus* of the *uterus* does not ſubſide before or even in the time of labour, the patient herſelf being ſenſible of, and complaining that the child is very high in the ſtomach. Sometimes the patient will alſo complain of vehement and cramp-like pains in various parts of the *abdomen* producing no effect, and which are afterwards proved to have been occaſioned by the irregular contraction of the *uterus*. This irregular and partial action, which is properly called ſpaſmodic, is capable of throwing the *uterus* into various forms; ſometimes the longitudinal, and at others the hour-glaſs, with all their varieties. Every change in the form of the



* Clyſteres injiciantur, quorum irritatione expultrix uteri facultas excitatur, et depleta inteſtina, ampliorem locum utero relinquant.

*Riverii Prax. Medic. De Partu Difficili.*

cavity of the *uterus*, from the genuine, will be productive of inconvenience, according to the peculiarity and degree of alteration; and it is to be wiſhed, that we had the power of altering the form when thus irregular, of ſuppreſſing the action of the *uterus* when too vehement or untimely, and of ſtrengthening it when too feeble, according to the neceſſities of each caſe. But as theſe things are beyond our power, and all that we can do is, not by commanding what we chuſe, but by making the beſt of ſuch circumſtances as do really occur, it is neceſſary to conſider, whether by any previous management it is in our power to prevent or remedy this irregularity of action, when it is in ſuch a degree, as to be very painful or troubleſome before, or at the time of labour. When there is pain of any unuſual kind in the region of the *uterus*, greater or different from that which may be conſidered as one of the common effects of pregnancy, there is uſually an increaſe of that feveriſh diſpoſition, which in a certain degree is natural to all women with child; and then it will be neceſſary to take away ſmall quantities of blood, and to be very attentive that the regular courſe of the bowels is procured or preſerved. This irregular, as well as the inſufficient action of the *uterus*, moſt frequently happens to thoſe who are naturally too irritable, or who lead inactive lives; and to ſuch women ſhould be pointed out the neceſſity

ceſſity of uſing exerciſe as far as their unwieldineſs will allow; and even in the time of labour, if rendered tedious from this cauſe, in which their pains are very ſharp yet ineffectual, it is of uſe to bear them when in an erect poſition, and to walk about in the interval. The chief part of what can be done further, is to impreſs upon her mind, the neceſſity of exerciſing that patience which we on our part ought never to want. In ſome caſes of this kind, when the patient has ſuffered much and for a long time, after bleeding and the adminiſtration of a clyſter, I have directed twenty drops of *Tinct. Thebaica* to be given, with the intention of ſuppreſſing the preſent pain which was irregular, and with the hope that when the pain returned, it would be with regularity and efficacy. But in general I have great objections to opiates on ſlight occaſions for women in labour; being perſuaded, that by diſturbing the order of labour, they occaſion very untoward ſymptoms, and make that which was in itſelf natural, become difficult or dangerous to the mother or child, as evidently as any other kind of interpoſition.

3. *Rigidity of the membranes.*

This has been mentioned by the generality of writers, as a cauſe of difficult labours; and I have obſerved, when a labour proceeds ſlowly, the membranes being unbroken, that their rigidity is uſually aſſigned as the cauſe of the difficulty. This ſubject has

has been conſidered in the hiſtory of Natural Labours; but we cannot too often inculcate, that neither the mother nor child are ever in any danger on account of the labour, before the membranes are broken; and that there is infinitely more caution required to avoid breaking them too early, than there is difficulty in breaking them when it is neceſſary. The true cauſe alſo why the membranes do not break at the uſual or proper time, is not in truth from the rigidity of the membranes, but from the weak action of the *uterus*; becauſe the membranes are ſcarcely ever ſo rigid as to withſtand the force of very ſtrong pains, unleſs the whole *ovum* were expelled at the ſame time; a circumſtance not unfrequent in premature labours. More than one caſe has occurred in my own practice, to which particular attention has been paid, for the purpoſe of regiſtering the obſervation, in which the labour has commenced properly, and proceeded with much activity, till the *os uteri* was fully dilated, and then ceaſed altogether for ſeveral days: at the end of that time, the action of the *uterus* has returned, and the labour has been finiſhed ſpeedily, with perfect ſafety to the mother and child*.

The

* When the head of the child is born with the membranes unbroken, it is ſaid to be born with a cawl. To this cawl imaginary virtues have been attributed, and a fancied value has been ſet upon it. It was eſteemed the perquiſite of the midwife,

The circumſtances of labours are however ſometimes ſuch as make it not only juſtifiable but eligible or perhaps neceſſary to break the membranes artificially. But before this is done, we ought firſt to be aſſured of the ſtate of the *os uteri*, becauſe it will often be ſpread ſo thin over the head of the child, before it is in any degree dilated, as to reſemble the membranes. But when the *os uteri* is wholly dilated, and we have determined upon the propriety of breaking the membranes, no inſtrument is required for that purpoſe. If they are confined with the end of the fore-finger upon the head of the child, during the time of a pain, they generally give way; or if this is inſufficient, they may be rubbed with the end of the finger, on one particular ſpot, till they are worn through; or they may be ſcratched with the nail of the finger, cut and turned up for that purpoſe. I am perſuaded, that no perſon, who is capable of judging when the membranes ought to be broken, will ever meet with any difficulty in breaking them.

4. *Dribbling of the waters.*

This circumſtance is a cauſe, or at leaſt a frequent attendant on Difficult Labours, eſpecially when the membranes have been broken deſignedly, or

midwife, and perhaps the whole was the contrivance of ſome intelligent man, to prevent her from interfering with any labour, which was going on in a natural way.

or ſpontaneouſly before the *os uteri* was dilated. But if the membranes are not broken, before the complete dilatation of the *os uteri*, the whole quantity of the waters is generally diſcharged at once, and the head of the child advances ſpeedily. Sometimes indeed the head of the child is ſo placed as to lock up a great portion of the waters, which cannot eſcape till the head is expelled. Should the waters be imperfectly diſcharged, a further ſmall portion of them is evacuated whenever there is a pain, and the pain is not efficacious, or immediately ceaſes after the diſcharge. In this ſituation there are only two methods to be purſued; we muſt either wait till the waters are all drained away by theſe repeated ſmall diſcharges, or we muſt contrive ſome method by which their evacuation may be haſtened. If there be no reaſon againſt our waiting, it is better not to interfere, but to leave the buſineſs entirely to nature, explaining the ſtate of the caſe to the patient or her friends; taking care to prevent their apprehenſion of danger from the delay of the labour, and not by our ſolicitude to raiſe their expectations or their fears. But when the waters dribble away in the advanced ſtate of a labour, or there is reaſon for our wiſhing a ſpeedy concluſion of it, either on account of the mother or child, it will be expedient to forward the diſcharge of the waters, by raiſing the head of the child

child a little higher into the *pelvis*, by the introduction of the fingers and thumb of the right hand, which may be done without prejudice to either of them, during the continuance of the pains; or, by preſſing the head towards the hollow of the *ſacrum*, by which means, more room will be made for the waters to eſcape. However, the dribbling of the waters is not a circumſtance of much importance, when it is not combined with other cauſes of difficulty; and it may be again mentioned that it is generally occaſioned by the artificial or premature rupture of the membranes.

5. *Shortneſs of the funis umbilicalis.*

The *funis umbilicalis* ſeems to admit of a greater variety than any other part of the *ovum*, being in one ſubject perhaps three or four times as long as it is found in another. It may be naturally very ſhort, or it may be rendered ſo accidentally, by its circumvolution round the neck or body of the child; and whichſoever of theſe is the caſe, the inconvenience produced at the time of labour is the ſame; that is, the labour may be retarded; or perhaps the *placenta* may be looſened prematurely; or the child may be injured by the mere ſtretching of it, as this muſt neceſſarily leſſen the diameter of the veſſels. But the two latter inconveniences very ſeldom occur.

The ſhortneſs of the *funis* is always to be ſuſpected

ſpected when the head of the child is retracted upon the declenſion of every pain; and it may ſometimes be diſcovered that it is more than once twiſted round the neck of the child, long before it is born. Various methods have been recommended for preventing this retraction of the head, ſome of which are inſufficient, and others unſafe*; and the inconvenience is uſually overcome, by giving the patient more time. But if the child ſhould not be born when we have waited as long as we believe to be conſiſtent with its ſafety, or that of the parent, it will be proper to change her poſition, and inſtead of ſuffering her to remain in a recumbent one, to take her out of bed and raiſe her upright, and to permit her to bear her pains in that ſituation; or, according to the ancient cuſtom of this country, to let her kneel before, and lean forwards upon the edge of the bed; or, as is now practiſed in many places, to ſet her upon the lap of one of her aſſiſtants. By any of theſe methods the retraction of the head of the child is not only prevented by its own gravitation, but the weight of the child is alſo added to the power of the pain; and it is likewiſe expelled upon an inclined inſtead of a level plane. In the courſe of practice, I can recollect

* Nocet obſtetricis digitus ano immiſſus, item nimia feſtinatio.—RUYSCH.

recollect with infinite ſatisfaction, a great number of caſes in which, by adverting to the benefits to be gained by an erect poſition, labours have not only been accelerated, but the uſe of inſtruments, which were before thought neceſſary, has been avoided.

When the head of the child is expelled, if the *funis* be twiſted round its neck, there is ſometimes a little delay and difficulty before the body can be excluded or extracted. We are, in the firſt place, taught that it is proper to bring this over the head forwards, leſt the *placenta* ſhould be ſeparated, or the body of the child be hindered from advancing till it ſuffers detriment, or is brought into abſolute danger. But it is in ſome caſes drawn ſo tight round the neck, that this cannot be done, without increaſing the hazard of the miſchief we wiſh to avoid. We have then been adviſed to ſlide the *funis* over the ſhoulders, but this may be equally impracticable with the former method. If either of theſe intentions can be accompliſhed without violence, they are to be attempted, otherwiſe they muſt be omitted. The child will nevertheleſs be expelled, if we wait for the return of a few pains, which we may do very ſafely, and without any other inconvenience than an increaſed diſtention of the *perinæum*; the body making a ſhorter

bend or doubling on account of the confinement of the neck by the twiſting of the *funis*.

Inſtances have occurred in which though the head of the child was expelled, the body has remained, and could not even be extracted for a long time, perhaps for ſeveral hours. Two things are then to be conſidered, firſt, whether the child be alive; ſecondly, whether it be hindered by the ſhortneſs of the *funis* merely. If the child be alive and breathes though imperfectly, we have no occaſion to be in a hurry, it being only requiſite that we ſhould keep its mouth open, allow of the free acceſs of the air, till it is expelled, or can be more readily extracted; for the internal organs will accommodate themſelves to that ſtate, and the child will poſſeſs a ſpecies of life half uterine and half breathing. But when it has remained in that ſituation as long as we think conſiſtent with its ſafety, and it cannot be without great violence extracted, ſhould it be hindered by the ſhortneſs of the *funis*, we have been taught * that it is adviſable to divide the *funis* before the body is expelled. Previous to our doing this it will however be expedient to tie the *funis* with two ligatures, and then to divide it between them, otherwiſe the child will be inſtantly deſtroyed by the ſudden guſh of blood,

* See *Chapman*—p. 63 and 85.

blood; as happened in a caſe under my own care, though it was living when I divided the *funis*.

When the child is dead, and the total excluſion of it is prevented by the tumefaction of the body, or by any other cauſe, by paſſing a napkin or handkerchief round its neck, and taking both the ends in our hands, we ſhall be able to exert much force, and if we pull ſteadily, and in a proper direction, we ſhall uſually ſucceed in extracting it. But if we are yet foiled in our attempts, turning the head on one ſide, we muſt endeavour to bring down one or both arms, which being included in the handkerchief, will allow us to pull with more force, and facilitate the paſſage of the body. The greateſt difficulty of this kind I ever ſaw, was in conſequence of the inflation of the whole outline of the body from its putrefaction, and there was occaſion for all the force I could exert; but in other caſes I have ſucceeded better, by availing myſelf of the changes produced, by waiting and giving more time, rather than by the exertion of much force.

6. *Weakneſs of the conſtitution.*

The health of women at the time of parturition is often impaired, either by ſome general indiſpoſition which may have continued through pregnancy, though not altogether dependent upon it; or, by ſome diſeaſe with which they are attacked, when they are perhaps in daily expectation of falling into labour. The more perfect their health

is,

is, the better fitted they are for the circumſtance of child-bearing, as the proceſs will not only go on with more regularity, but they will alſo recover more favourably, as is well known to thoſe who are engaged in the practice of midwifery. Becauſe though it be allowed that the ſtate of child-bearing is not a ſtate of diſeaſe, yet experience has ſhewn, that all diſeaſes with which women are at that time affected, are not only apt to fall upon thoſe parts which are left in a more irritable ſtate, in conſequence of the changes they have ſo lately undergone, but the progreſs of diſeaſes is alſo then more violent, and the event more dangerous *.

But the caſe of which we are now ſpeaking, is when the general health of women is reduced below its proper ſtandard, by ſome previous or accompanying diſeaſe, not abſolutely connected with the ſtate of pregnancy, of which a conſumption is a very fair example, as conſumptive perſons ſeem of all others to be in the moſt hopeleſs ſtate. But though ſuch are often in their own minds, and in the opinion

* Hence at the time of any epidemic diſeaſe, women more frequently fail in child-bed, though they are managed with equal ſkill and care. In the hiſtory of the different plagues in London, there are ſometimes two or three hundred women who are put down as dying in child-birth in one month. *Procopius* has alſo told us in his account of the plague at Conſtantinople—*Tres ſaltem puerperæ convaluere.*

nion of their friends, not able to go through the fatigue and other unavoidable conſequences of child-bearing, I do not recollect an inſtance of any woman, in that ſituation, being unequal to her delivery, or having her fate haſtened by it. If ſuch women have little ſtrength, they have little difficulty to overcome; the ſtate of the parts which, in a common way, might require the exertion of much force, correſponding with the force which they are able to exert; and more time only is required. When this prognoſtic however is made, of the probable event of ſuch labours, it is to be preſumed that no particularly untoward circumſtance ſhall occur; for if there ſhould, it cannot be expected, that with extreme debility there ſhould be the ſame power or reſources, as in great ſtrength and good ſpirits.

In conſtitutions much reduced by a conſumption, or a diſeaſe of any part not immediately affected by child-bearing, there is, uſually, not only ſufficient ſtrength for perfecting the buſineſs of a common labour, but the patient appears to be relieved for a certain time after her delivery; and then, if they were not dependent on pregnancy, or were incurable, they return, and make their wonted progreſs.

The effect of diſeaſes ſeems alſo in many caſes, to be ſuſpended during pregnancy. Of the diſtinctions to be made in our opinion, of the event of

acute

acute diſeaſes, during which a patient may either be delivered at her full time, or ſuffer abortion, we have already ſpoken in the Eſſay on Uterine Hemorrhages.

7. *Fever or local inflammation.*

On the acceſſion of labours, there is uſually ſome increaſe of heat, of the quickneſs of the pulſe, thirſt, and general feveriſh diſpoſition; and theſe are commonly in proportion to the exertions required, or made for the completion of the labour, with reſpect to which they are properly ſpeaking, merely ſymptomatic. But in ſome caſes the excitement is too great, and inſtead of helping the action of the parts concerned in parturition, it prevents their acting with regularity or energy. Whenever the pains of labour are feeble, it is a vulgar cuſtom, without regard to the cauſe, to give cordials very freely, with the view of accelerating their returns, or of ſtrengthening them; though under many circumſtances, by ſuch proceeding * we evidently add to the evils we mean to remove. In ſome caſes alſo, from the acuteneſs and conſtancy

* *Lord Bacon* had a clear idea of this, though by the manner of expreſſion it is rendered ſomewhat obſcure: "To procure eaſy travails of women, the intention is to bring down the child, whereunto they ſay the loadſtone helpeth; but the beſt help is to ſtay the coming down too faſt."

*Nat. Hiſt. cent.* x. 968.

ſtancy of the pain which the patient endures, and from its ſituation alſo, it may be readily diſtinguiſhed from that which is occaſioned by the action of the *uterus*, and gives us too much reaſon to ſuſpect, that ſome of the contents of the *abdomen* are already in a ſtate of inflammation.

It does not ſeem neceſſary to bleed every patient on the acceſſion of labour, and for ſome it muſt be highly improper. But whenever the feveriſh ſymptoms become violent, it is I believe univerſally proper ; the quantity of blood taken away being ſuited to the degree of fever, and to the conſtitution of the patient ; and much ſervice will alſo be done by the frequent exhibition of emollient clyſters, by keeping the room cool and well aired, by giving cooling drinks and medicines, and by keeping the patient in a quiet ſtate. When the fever is removed, the pains will come on, and perform their office with propriety and ſucceſs. Independently of fever, when the exertions which the patient makes are vehement, if ſhe be plethoric, there is on that account ſometimes a neceſſity of taking away ſome blood ; for during theſe vehement exertions, if the blood-veſſels are diſtended, ſome of them may give way, and the patient be brought into the moſt imminent danger, before the delivery then at hand, be compleated.

8. *Want of Irritability in the Conſtitution.*

Under many circumſtances which occur in the practice of medicine, it has been obſerved, that when a cauſe of pain exiſts, it is found to produce an effect quite contrary to what might be expected; that is, inſtead of exciting the powers of any one part, or of the whole frame to action, it creates a partial or univerſal inſenſibility, and a diſproportionate action. In ſome caſes, on the acceſſion of labour, the cauſe, inſtead of raiſing a diſpoſition to act, or a power of acting with energy in the parts concerned, ſeems to leſſen both the diſpoſition and power to act, and in ſome caſes to deprive them, for a certain time, of all power, as effectually as if they became paralytic. Inconveniencies of this kind are moſt frequently obſerved to take place in fat and inactive women, and ſuch, in ſpite of all the means which can be ſafely uſed, will neceſſarily have very ſlow and lingering labours; and though they may at length be delivered by their pains, feeble as they are, when there is no material cauſe of obſtruction, much time will be required for every part of the proceſs. I have often ſuſpected that the foundation of this imperfect action, or total inaction in the advanced ſtate of labour, may have been laid by ſome error or accident in the beginning, perhaps, by exciting the

action

action prematurely, which will, of courſe, ceaſe when the artificial cauſe was removed *.

The circumſtances attending labours are generally alike, yet in many women they are marked with ſome peculiarity, moſt frequently in the time required for their completion. When we have had an opportunity of obſerving the progreſs of labour in two or three inſtances, we ſhall be able to tell what will be the probable termination, and when it will take place; and we can no more controul the order of a labour in one woman, ſo as to make it correſpond with or reſemble that of another, than we can judge of the quantity of food which one perſon may require by that which is ſufficient for another, or regulate any other function of the body. One woman may require twelve hours for the production of the ſame effects in the time of labour, that another may finiſh in four hours; and it would be in vain to attempt to make an alteration, becauſe the reaſon exiſts in ſome eſſential property of the conſtitution.

9. *Paſſions of the Mind.*

As the infirmities and particular ſtates of the body have a powerful influence upon the mind, and as the affections of the mind have, on various occaſions, a reciprocal effect upon the body, it might



* See the Introduction, Chap. IV. Sect. X.

be reaſonably expected, that the progreſs of a labour ſhould be forwarded or hindered by the paſſions. It is conſtantly found, that the fear of a labour, or the ſame impreſſion from any other cauſe at the time of labour, leſſens the energy of all the powers of the conſtitution, or diminiſhes, or wholly ſuppreſſes the action of the parts concerned in parturition. It is alſo obſerved, that the chearful flow of the ſpirits, which ariſes from the hope of an happy event, inſpires women with an activity and reſolution which are extremely uſeful and favourable in that ſituation. In the time of a labour proceeding very ſlowly or irregularly, doubts and fears in the mind of the patient have an evident and great influence upon the pains; and when theſe are removed, and her reſolution confirmed, ſhe will go on with courage, and effects will be produced which would have been impoſſible if ſhe had remained in a ſtate of depreſſion. The intelligent practitioner will avail himſelf of the knowledge of theſe things, and by his diſcretion he will inſpire his patient with ſentiments which will enable her to go through difficulties, which to her feelings, and perhaps to his own judgment, appeared unſurmountable. It will alſo regulate the conduct of all her attendants and friends, and lead them ſtep by ſtep to co-operate in his views and intentions, which will at length terminate to the real advantage

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tage of his patient, the ſatisfaction of her friends, and the increaſe of his own reputation.

10. *General Deformity.*

Many women who are gibbous or diſtorted in the courſe of the ſpine, have the *pelvis* well formed, and there are a few in general appearance perfectly ſtraight, who have yet ſome defect in the *pelvis*. Of the eaſe or difficulty of labours, depending upon the capacity or form of the *pelvis*, we are to ſpeak in another place. Thoſe who are gibbous, are not unfrequently aſthmatic, or have ſome infirmity which prevents their breathing freely, or the retention of their breath; and ſuch muſt ſuffer ſome inconvenience at the time of labour, though the action of the *uterus* may be proper, and all the parts concerned in parturition in a natural ſtate. For as both the inſtinctive and voluntary force, eſpecially the latter, are affected by the manner of breathing, and duly exerted only when the breath is retained, and this not being under ſuch circumſtances poſſible, of courſe the progreſs of the labour muſt be retarded. Should there be any reaſon to ſuſpect inflammation about the *thorax*, particular attention muſt be paid to it, otherwiſe we have only to give more time for the completion of the labour, and to wait for that effect from a repetition of feeble pains, which, without this inconvenience, would have been produced by a ſmaller number.

## ON THE SECOND ORDER;

### OR,

### *Thoſe Labours which are rendered difficult by the Rigidity of the Parts requiring Dilatation.*

1. *Firſt Child.*

EVERY woman is expected to have a more tedious labour with her firſt, than with ſubſequent children, and the difference is uſually in proportion to the number which ſhe has had. Thus if a woman were twenty-four hours in labour with her firſt child, ſhe might be ſix with her ſecond, and with the reſt four or perhaps two; but from any general eſtimate of this kind there will be many deviations. It was before obſerved, that when women have had ſeveral children, the practitioner is often able to form a tolerably preciſe opinion of the kind of labour which they will be likely to have, and which may be as peculiar to their conſtitutions, in manner and time, as any other function of the body: and it is no more in our power to change this conſtitutional labour, as it may be called, than it is to alter the frame of the body, or any of the functions thereon depending.

The difficulty with which firſt labours are completed, not only depends upon the greater rigidity of the parts, or upon their re-action, but on the imper-

imperfection or irregularity of the action alſo, by which they are to be dilated; for this is generally far leſs perfect and regular in the firſt inſtance, than when the ſame office has been frequently performed. But though with firſt labours there is rather a greater chance of women wanting aſſiſtance, there is no ſpecific cauſe of difficulty, and they generally require only more time to be given for their completion.

2. *Advanced in Age.*

If a woman be far advanced in age at the time of having her firſt child, the difficulty attending her labour may be expected to be greater. At a certain time of life, every woman arrives at maturity, or that period when ſhe may be conſidered as having acquired the greateſt degree of perfection of which her frame is capable; when the inconveniencies of youth are paſſed, and thoſe of age are not arrived. This ſtate of perfection, the time of which will vary in different conſtitutions and climates, and which we may conclude to be beſt fitted for the act of parturition, may continue for many years. But if a woman ſhould be with child before or after this time of perfection, ſhe will be liable to difficulties; as in the one caſe ſhe would be ſcarcely able to bear without injury the changes ſhe muſt undergo; and in the other, the firmneſs which all the parts have acquired,

would

would leſſen their diſpoſition or capability of dilating: greater force therefore will be required, or the ſame degree of force muſt be continued for a a longer time. In this country there has ſeldom been any reaſon to ſuſpect women to be pregnant before they were able to bring forth children without any or much inconvenience; and for the prevention of ſuch as may attend the firſt act of parturition in thoſe who are advanced in age, we have been adviſed to order frequent and ſmall bleedings towards the concluſion of pregnancy, and that the patient ſhould ſit over the ſteam of warm water every night at bed time, and afterwards anoint the external parts with ſome unctuous application. Perhaps there is not authority for ſaying, that no advantage can be derived from the uſe of theſe means; but certainly the impreſſion made upon the mind of the patient by the novelty and peculiarity of the method, will, in patients of a timid diſpoſition, raiſe ſuch apprehenſions of danger and difficulty, as will over-balance the good which can poſſibly be derived from them. It is therefore better to omit the uſe of any ſuch means on this account, more eſpecially as it does not conſtantly happen, that the difficulty of labour is in proportion to the age of the patient when ſhe has her firſt child; that being in many caſes, as eaſy at forty years of age or upwards,

as

as if ſhe was only twenty-five. In the worſt labours ariſing from this cauſe, there is no peculiarity in the difficulties, but merely an increaſe of thoſe which are produced by the rigidity of the parts, and therefore only more time required for their completion.

3. *Too early Rupture of the Membranes.*

The premature rupture of the membranes, whether natural or artificial, has been often mentioned as the cauſe of many tedious or difficult labours. If it be allowed that the membranes containing the waters were intended to be the medium by which the *os uteri*, and other tender parts, ought to be dilated, ſome inconvenience muſt ariſe when theſe are broken and the waters diſcharged, the head of the child being ſubſtituted for them; which being a firmer and leſs accommodating body, cannot, for a long time be admitted within the circle of the *os uteri*, which will of neceſſity be dilated more untowardly and more painfully.

The difficulties ariſing from this cauſe, even in firſt labours, will be very much leſſened, if the patient be confined to a recumbent poſition, and we defer, as far as is in our power, the coming on of the action of the *uterus*, that the moſt perfect diſpoſition to dilate may be previouſly aſſumed by the parts. A longer time will certainly be required for completing labours attended with this circum-

ſtance only, but they may in general be more properly called lingering or tedious, than really difficult.

4. *Oblique Poſition of the* Os Uteri.

The natural poſition of the *os uteri*, and that in which it is moſt conveniently diſtended, is at the center of the ſuperior aperture of the *pelvis*; for when thus placed, the effect of the action of the *uterus* is moſt favourably produced. But the *os uteri* is ſeldom found exactly in this ſituation, and in ſome caſes is projected on either ſide, and in others ſo far backwards, that it cannot be felt for many hours after the commencement of labour. This oblique poſition of the *os uteri*, to what direction ſoever it may tend, has been conſidered not only as a frequent, but as a general cauſe of difficult labours; and this doctrine was, at one period of time, taught and received in all the ſchools of midwifery in Europe. In every enquiry after knowledge, in almoſt any ſcience, opinions will be advanced, which ſometimes lead to further improvement; but when experience begins, opinions ſhould end. But if ſo much regard is paid to opinions as to found any certain practice upon them, and they ſhould prove erroneous, they become the ſource of much miſchief. The preſent caſe is a ſtriking example of the truth of this obſervation; for when it was preſumed that every diffi-

cult

cult labour was occaſioned by the oblique poſition of the *os uteri*, it was ſuppoſed neceſſary to remedy the inconvenience thence ariſing by manual aſſiſtance, and to drag the *os uteri* from its oblique to a central poſition during the time of every pain. The opinion of the oblique poſition of the *os uteri* being the chief cauſe of difficult labours, is now fully proved to be erroneous; and though it were oblique, ſuch poſition is not to be conſidered as a general cauſe of the difficulty, but as an accompaniment of ſome other primary cauſe. Thus when the *pelvis* is diſtorted, the *os uteri* is conſtantly found in an oblique ſituation, yet the difficulty of the labour, as well as the obliquity, are occaſioned by the diſtortion.

It muſt however be allowed, that ſome labours are procraſtinated by the oblique poſition of the *os uteri*, and that it is often combined with other cauſes of difficult labours, though, ſingly, it is ſeldom of ſufficient importance to be the cauſe of truly difficult ones. But when it does retard a labour, or accompany a difficult labour, it does not require any manual aſſiſtance, or that we ſhould retract it to a central poſition with reſpect to the cavity of the *pelvis*; both the thing itſelf and the difficulty thence ariſing will be obviated, without detriment or much trouble, if the patient be confined to a proper poſition. If, for example, the

*os uteri* be projected to the left ſide, ſhe ought to reſt as much as poſſible on the ſame ſide, and ſo of the right; if it be projected backwards, which is always the caſe when we cannot reach the *os uteri* in the beginning or early part of a labour, ſhe ought to lie upon her back. By this method the *fundus* of the *uterus*, conſtantly leaning or inclining to the ſide of the obliquity, will gradually but effectually project the *os uteri* more and more towards a central poſition.

Caſes have been recorded, in which it was ſaid that the *os uteri* was perfectly cloſed, and in which it has not only been propoſed to make an artificial opening inſtead of the cloſed natural one, but the operation has actually been performed. I do not know that I ſhould be juſtified in ſaying that ſuch caſes have never occurred, becauſe they have not occurred in my practice; but I am perſuaded that there has been an error in this account, and that what has been called a perfect cloſure of the *os uteri* has not been ſuch, but that we have been unable to diſcover it.

5. *Extreme Rigidity of the* Os Uteri.

Difficult, as well as tedious and very painful labours are frequently occaſioned by the unuſually rigid ſtate of the *os uteri*. The manner of, and the time required for its dilatation will depend upon two circumſtances; firſt, the degree of diſpo-

ſition

ſition to dilate which it may have previouſly acquired; and ſecondly, the degree or force of the action exerted by the *uterus*. The former of theſe is, in general, far leſs perfect with firſt than with ſubſequent children, even preſuming that it is in its moſt natural ſtate; but when it aſſumes from any cauſe a ſtill greater indiſpoſition to dilate, of courſe the labour will be both more difficult and tedious. In a firſt labour it not unfrequently happens, that the *os uteri* may not be dilated in leſs than twenty-four or even forty hours, when the reſt of the labour may be completed in four, or perhaps a ſhorter time, yet the very ſame perſon may have the whole proceſs with her next child completed within ſix hours.

We have before taken notice of the advantages ariſing from the changes in the ſtate of the ſoft parts being perfected, before the acceſſion of labour; but when theſe are as favourable as can be wiſhed, by the very action of the *uterus* preſſing its contents upon the *os uteri*, and much more frequently by attempts to dilate it artificially, this part becomes inflamed, and the indiſpoſition to dilate is increaſed according to the degree of inflammation. The inflamed ſtate of the part is often indicated by its heat and dryneſs, but whenever it is extremely rigid, and there has been a long continued action of the *uterus*, with little or no advantage, the impediment

diment to the progreſs of the labour being clearly occaſioned by the reſiſtance made by the *os uteri*, I believe it is always right to conſider that part as inflamed. If this be allowed, inſtead of attempting to dilate it artificially, it is the proper object of art, to recover in the firſt place the natural diſpoſition to dilate, and then the pains of labour will be equal to the purpoſe. With this view it will be neceſſary to take away ſome blood, to give cooling medicines and drinks, to direct emollient clyſters to be frequently injected, and, inſtead of uſing any means with the intention of increaſing the force of the pains, to confine the patient to a recumbent poſture; and to gain, if it were in our power, a ſuſpenſion of the labour, till the inflammatory diſpoſition be removed, when the dilatation will proceed leſs painfully and more ſpeedily.

When a labour comes on prematurely, or before the parts have acquired their dilatable ſtate, as it may be called, the poſition of the *os uteri* will be very different. In ſome caſes it begins to dilate when it is high up in the *pelvis*, but in others, eſpecially when the *pelvis* is, in compariſon with the child, very large, the *os uteri* may be protruded very low down, before there is any degree of dilatation, though it be ſpread ſo thin over the head of the child, or the membranes, as to give the feel of the membranes alone. If, under

theſe

theſe circumſtances, the external parts ſhould be much relaxed, and the pains at the ſame time ſtrong, it is poſſible for the head of the child to be expelled though enveloped in the *os uteri*, and much miſchief may be thereby occaſioned *. For the prevention of this accident, when there is any reaſon to dread it, it will be proper for the patient to be confined to an horizontal poſition, and for the practitioner to reſtrain the advancement of the head, till it is cleared of the *os uteri*; or, if the caſe has actually happened, to uſe all the means we ſafely can, to replace it, and extract the head. When the *pelvis* is large and the head of the child, being moved from its reſting place upon the *pubis*, drops by its own weight into the lower part of the cavity of the *pelvis*, the accident often becomes a cauſe of a *procidentia* or *prolapſis* of the *uterus*, which cannot, as far as I know, be always prevented. All that art dictates to be done at the time of labour, is to render this as ſlow and gradual as poſſible, and after delivery, to confine the patient to her bed for a longer time.

6. *Uncommon Rigidity of the external Parts.*

The ſtate of the external, as well as of the internal parts is very different in different women, both in the beginning and in the progreſs of labours. Even

* Os uteri aliquando prolabitur.
Rusch. Obſ. Anatom. XXV.

Even in firſt labours they readily yield in ſome women, ſo as to allow the head of the child to paſs through them with great facility and ſafety, but in others they are extremely rigid and unyielding, and withſtand the action of the *uterus*, though very ſtrong, for a very long time; and then do not dilate without great danger of a laceration. In firſt labours a more difficult dilatation than in others is always to be expected, and more care is required to prevent a laceration; the ſtate of theſe parts is however very different, and they require ſome attention in every labour. There ought to be, and uſually is a correſpondence between the ſtate of the parts and the power of the pains; but in ſome caſes the external parts are rigid when the pains are feeble, whilſt in others, when the parts are diſpoſed to dilate, the pains are exceedingly ſtrong, puſhing with unabating force, the head of the child, ſo that the parts muſt either dilate or be lacerated. Of many of theſe circumſtances we have already ſpoken.

In firſt labours the external parts may require one, or ſeveral hours continuance of the pains, before they are ſufficiently dilated to allow the head of the child to paſs through them without danger of laceration; but the difficulty thence ariſing does not ſeem to require, or to be relieved by our interpoſition, further than to prevent injury as far as

that

that is in our power, by too ſpeedy an excluſion of the head of the child, in the manner before adviſed. The merit of our conduct under theſe circumſtances will be chiefly negative; for as we cannot give to the parts their diſpoſition to dilate, and ought not to dilate them artificially, there only remains for us to wait the due time: art being more frequently exerciſed on ſuch occaſions in remedying the evils which art has produced, than in rectifying thoſe which are neceſſary or unavoidable. It is alſo to be obſerved, when the head of the child paſſes through the inferior aperture of the *pelvis* with difficulty, though the external parts are preſſed upon with conſiderable force; that the impediment to the delivery does not ariſe from the reſiſtance made by theſe, but more properly from the elongation or bending of the ſpinous proceſſes of the *iſchia*, and the labour is then to be referred to the next order.

## ON THE THIRD ORDER;

### OR,

### *The Cauſes of difficult Labours from the Diſproportion between the Head of the Child and the Cavity of the* Pelvis.

1. *Original Smallneſs of the* Pelvis.

THE cavity of the *pelvis* in women in general, bears a certain proportion to the common ſize of the heads of children; yet as they both admit of conſiderable variation, independent of diſtortion or diſeaſe, it is poſſible that a woman with a *pelvis* rather under the common ſize, may conceive a child far beyond the uſual dimenſions; and when this is the caſe, there muſt of courſe be greater difficulty at the time of parturition. When therefore the ſmallneſs of the cavity of the *pelvis*, and the largeneſs of the head of the child are mentioned, they are to be conſidered as relative and not as poſitive terms; becauſe the *pelvis* of ſome individual woman may be ſo large as to ſuffer the largeſt head of a child of which we have any example, to paſs through it; and the ſmalleſt head may be eſteemed large, if compared with a yet ſmaller *pelvis*.

But though a labour may from either of theſe cauſes, ſeparate or combined, be rendered tedious and

and painful ; as in conſequence of the action of the *uterus*, the head of a child rather larger than ordinary will be compreſſed into a much leſs compaſs, and moulded to the form as well as the dimenſions of the cavity of the *pelvis*, there is not uſually occaſion for the aſſiſtance of art, if the labour be in other reſpects natural ; but we are to wait patiently for thoſe changes, which in due time may be reaſonably expected, and ſcarcely ever fail to take place.

*Diſtortion of the* Pelvis.

On the cauſes, kinds, and degrees of diſtortion of the *pelvis* we have already ſpoken very fully*. The effects produced, or the impediments occaſioned by this diſtortion, at the time of parturition, will ſomewhat depend upon the part diſtorted, but chiefly on the degree of change in, or diminution of the dimenſions of the cavity, by which the relation between it and the ſize of the head of the child is perverted or deſtroyed. Diſtortion of the *pelvis* at the ſuperior aperture creates an obſtruction to the paſſage of the head of the child, which will be overcome with more difficulty by the powers of the conſtitution, and which will be more inconveniently managed by art, than an equal degree of obſtruction in the lower part of the *pelvis*. The greatneſs of the difficulty will



* See the Introduction, Chap. I. Sect. X.

nevertheleſs chiefly depend upon the degree; and in the various degrees which are found to occur, the practitioner may ſee a cauſe of every kind of difficulty which he may meet with in practice. A ſmall degree of diſtortion may occaſion a difficult labour of that kind which may not be an object proper for the exerciſe of his art, but which is at length completed by the long continued action of the *uterus*, firſt moulding and reducing the form and ſize of the head, 'till it is adapted to that of the *pelvis*, and then forcing it through the diminiſhed cavity. Or, the degree of diſtortion may be ſuch, that notwithſtanding all the reduction of the head, which can be accompliſhed by the efforts of the conſtitution, there does not remain ſufficient power to expel the head; but it may be brought into ſuch a ſituation, as to afford us the hope of ſafely delivering the patient by art, and of preſerving the life of the child. Or, the diſtortion may be ſo conſiderable, that it is impoſſible for the head of the child to be expelled without leſſening it, and the child muſt be ſacrificed to the ſafety of the parent. Or, laſtly, the diſtortion may be ſo great, that if the head of the child were leſſened, there would not be a poſſibility of extracting it, and we muſt either ſubmit to loſe the lives both of the parent and child, or attempt to ſave that of the lat-

ter,

ter, by the *cæſarean* ſection, or by ſome other operation equally hazardous.

In thoſe caſes in which there is a very great degree of diſtortion of the *pelvis*, the impoſſibility of the head of the child paſſing through it, is ſelf-evident, and readily diſcovered on the firſt examination *per vaginam*. But in leſs degrees of diſtortion, no judgment can be formed *à priori* whether the head can paſs or not; and we ought to defer any determination upon the neceſſity or propriety of giving aſſiſtance, till we are convinced that the difficulty cannot be overcome by the powers of the conſtitution; and the conviction is not ſatisfactory till the efforts are diſcontinued or ceaſe entirely. Degrees of difficulty to our apprehenſion inſurmountable, are often overcome by the mere force of the pains, and ſo long as theſe continue vigorous, we are not to deſpair of a happy event; but encouraged by experience, and ſupported and juſtified by moral as well as ſcientific principles, we muſt rely upon the advantages which time and proper conduct may afford.

The far greater part of thoſe labours which are rendered difficult by the diſtortion of the *pelvis*, only require a longer time for their completion. Some however demand the aſſiſtance of art; and when that is the caſe, the kind of aſſiſtance muſt vary according to circumſtances. But theſe will be

be more particularly ſtated when we come to ſpeak of the various operations in the practice of midwifery.

3. *Head of the Child uncommonly large; or too much oſſified.*

No arguments are required to prove that a ſmall body will paſs through a ſmall ſpace with more facility than one that is large; the ſize of the body being ſuppoſed to bear a relation to the capacity of the ſpace. Of courſe, the larger the head of the child at the time of birth is, with the greater difficulty will it be expelled; but if the *pelvis* be not diſtorted and of a common ſize, we may always expect that the woman will be ultimately delivered by her natural pains, if there be no other cauſe of difficulty, though a longer time may be required for the completion of the labour.

It is not merely from the ſize of the head of the child that a labour may be rendered more tedious, more painful, or even truly difficult. The connection of the bones of which the head is conſtructed, is ſuch as to allow of conſiderable diminution and change of form in its paſſage through the *pelvis*. The extreme degree of diminution and change which it is generally capable of undergoing, is perhaps impoſſible to determine; but it does not ſeem unreaſonable to conjecture that it may be reduced to one third of its original ſize, without the

the deſtruction or even injury of the child from the compreſſion; the alterations being ſo gradual. The advantages gained by this compreſſion of the head in all caſes of difficulty, occaſioned by the natural ſmallneſs or leſs degrees of diſtortion, are wonderful, as was before obſerved. But as there is great difference in the degree of oſſification in the heads of different children at the time of birth, thoſe heads which are moſt perfectly oſſified, muſt of courſe be capable of undergoing the leaſt change; and the degree of change which they can undergo, muſt be produced with the greateſt difficulty, and purchaſed at the expence of more ſevere or longer-continued pains. On this account a large head, with a very imperfect oſſification is often found to paſs through a *pelvis* which might be conſidered as relatively ſmall, with more eaſe than a ſmaller head in which the oſſification was more complete; and yet the cauſe of the delay may not be diſcovered before the birth of the child. In caſes of difficult labour proceeding from theſe and ſimilar cauſes, it not being in our power to chuſe the circumſtances, all that we can do is to manage ſuch as occur in the moſt prudent manner; and we have commonly to wait only for thoſe effects to be produced which may be eſteemed as conſequences of the efforts of the conſtitution fairly exerted;

exerted; and we are never to deſpair ſo long as the efforts are properly continued.

4. *Head of the Child enlarged by Diſeaſe.*

Two diſeaſes have been mentioned by writers as the cauſe of this enlargement, viz. tumours growing on the heads of the children, and the hydrocephalus, but either of theſe very rarely occur. With reſpect to the firſt, it is ſaid, that when the tumour, of whatever kind it may be, is of ſuch a ſize as to be an impediment to the birth of the child, it ſhould be opened or extirpated, and that the operation is not only perfectly conſiſtent with the ſafety of the mother, but frequently with that of the child alſo. Of the exiſtence of theſe tumours the inſtances recorded do not leave a doubt*; nor of the poſſibility, when they are large, of their obſtructing the delivery of the patient: but of their extirpation with ſafety to the child, I ſhould very much doubt, though no human being can circumſcribe poſſibility. As it is the duty, ſo it will always be the ſolicitous wiſh of every practitioner to preſerve a life, when it is in his power.

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* Partus difficilis a tumoribus, è capitibus fœtuum dependentibus.

Ruysch. Obſ. Anatom. LII.

The integuments of the head of the child, from long continued compreſſion, may become ſo much tumefied, and altered from their natural form and ſtate, as ſometimes to give the feel of a diſtinct and adventitious tumour; and yet ſuch may not require any aſſiſtance of this kind. But when there really any unnatural tumours or excreſcences, the point of practice would depend upon the degree of impediment to the paſſage of the head which might be thereby occaſioned; or upon the nature of the tumour, whether it could be extirpated, or only admitted of an opening to be made into it for the purpoſe of leſſening its bulk; or if neither of theſe could be done with propriety, by acting as if no ſuch tumour exiſted.

With regard to the hydrocephalus, which if of a certain ſize, would certainly be a great obſtacle to the delivery, this is not readily to be diſtinguiſhed in the early part of a labour; becauſe the membranes of the *ovum* are in ſome caſes, as thick as the integuments of the head in others. But if we were aſſured that an hydrocephalus did exiſt, there would not always be occaſion for us to act; as it is far more eligible to wait ſo long as to give time for the expulſion of the head of the child by the natural efforts, if they are equal to that effect. Should the head be ſo much enlarged by the quan-

tity of fluid contained in it, that it was too large to paſs, even in that caſe the integuments will generally burſt by the force of the pains. But when the fact is aſcertained, and the labour is rendered extremely tedious and lingering from this cauſe, it does not ſeem reaſonable to allow the patient to undergo ſuch long continued pains as when we have any hope of ſaving the life of the child. When we have determined upon the neceſſity or propriety of delivering the patient, all that generally is neceſſary to be done, is merely to perforate the integuments of the head, immediately after which the water flowing away, the head is ſpeedily expelled, and the birth ſoon and eaſily completed.

5. *Face inclined towards the* PUBES.

On a former occaſion we have mentioned that there are four varieties in the poſition of the head of the child at the time of birth. The firſt when the *vertex* or hindhead is turned towards the *pubes:* the ſecond when the face is turned towards the *pubes:* the third, when the head preſents with one or both arms: the fourth when the face preſents. The firſt of theſe may be conſidered as the ſtandard poſition, becauſe it is not only the moſt common, but the moſt eaſy alſo; the head of the child being ſo conſtructed as to admit, in that

that poſition, of the greateſt and moſt ready compreſſion and adaptation to the *pelvis*. But the other poſitions are not to be conſidered as conſtituting labours of any other claſs, but as varieties of the natural poſition, though they muſt of neceſſity occaſion delay in all labours in which they happen; either becauſe a portion of that ſpace which ſhould be wholly devoted to the head of the child, is occupied by ſome other part, or becauſe the bones of the *cranium* more ſlowly and imperfectly conform to the ſize or ſhape of the *pelvis*. When the face of the child is inclined towards the *pubes*, the peculiarity of the poſition is not uſually diſcovered in the early part of the labour, nor even when the firſt ſtage is completed, the practitioner being generally ſatisfied with knowing that it is a preſentation of the head. But when there is any unuſual delay, perhaps without any very obvious cauſe, it then becomes a duty to inveſtigate and explore the cauſe, and it is not a very unfrequent thing to find the face turned towards the *pubes*. This poſition is moſt readily known by our being able to feel the greater fontanelle in a common examination, though it is alſo proved by other circumſtances relating to various parts which it is unneceſſary to point out. When this poſition is found, it does not follow that any thing ought to be done; but we

are to wait a longer time; becauſe as experience has proved that the head in this poſition will be ultimately expelled by the natural efforts, ſo long as theſe are continued, no artificial help ſhould be given or attempted. But when the pains ceaſe, or when we are fully convinced that they are unequal to the exigencies of the caſe, ſuch aſſiſtance muſt be given as the ſituation of the parent may allow and require.

With this poſition of the head, beſides the greater length of time which may be required for moulding and expelling it, there will alſo be a greater diſtention of the external parts, becauſe the hindhead cannot be cleared of the *perinæum* before the chin has deſcended as low as the inferior edge of the *ſymphyſis* of the *oſſa pubis*; by which an inconvenience is produced equal to what an increaſed depth of the cavity of the *pelvis* would occaſion, or a deficiency of the arch of the *pubes*. There are alſo ſome peculiarities in the operation when we deliver with the *forceps* or *vectis*; but of theſe we ſhall ſpeak when we come to the directions for the uſe of thoſe inſtruments.

6. *Preſentation of the Face.*

The preſentation of the face is diſcovered by the general inequalities of the preſenting part, or by the diſtinction of the particular parts, as the eyes,

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the noſe, mouth, or chin. In this preſentation the child will generally be expelled by the natural efforts, but a much greater length of time will be required for the completion of the labour, for the reaſons mentioned under the laſt cauſe, which are in this perhaps increaſed. But the child may be born without any injury, though the face will ſometimes be ſwelled in an aſtoniſhing manner, and the external parts of the mother being infinitely more diſtended than in a natural poſition, greater care is neceſſary to prevent their laceration.

If after the long continuance of the labour we are convinced that extraordinary aſſiſtance is required, then the ſame obſervation may be made with regard to the uſe of the *forceps* or *vectis* as in the preceding article; but of the peculiar conduct which it may be neceſſary to purſue, we ſhall ſpeak hereafter.

7. *Head preſenting with one or both Arms.*

Though the head ſhould preſent with one or both arms, experience hath fully proved that a woman may be delivered by the natural efforts with ſafety to herſelf, and without prejudice to her child, if the *pelvis* be well formed. But as a part of the cavity which ſhould be appropriated to the head will be filled by the additional bulk of the arms, there will be an evil ſimilar to what would

would be produced by a ſmall, or by a ſomewhat diſtorted *pelvis*; and if the *pelvis* be barely of ſufficient dimenſions to allow the head of the child to paſs through it, then the additional bulk of the arms may render the paſſage of the head impoſſible; or the labour may be ſo much retarded as to make it what is properly called difficult.

In the beginning or in the courſe of a labour of this kind, the practitioner will often be able to return the preſenting arm or arms beyond the head, without any detriment; but he muſt be very careful not to ſolicit the deſcent of the arm before the head, leſt he ſhould change the whole ſituation of the child, and convert that which would have been only a variety of a natural into a preternatural labour.

In ſome caſes we are enabled to feel the head, a foot and an arm at the ſame time, and it will then be expedient to graſp and bring down the foot, and to deliver in that manner. But it behoveth us to diſtinguiſh very cautiouſly between a hand and a foot, becauſe the miſtake would lead us to the neceſſity of turning the child, an operation which would otherwiſe not have been required.

In preſentations of the head together with one or both arms, unleſs there ſhould be any particular reaſon for our wiſhing to turn the child, the propriety of which muſt reſt upon the

the judgment of the practitioner, we are to be prepared, and wait with patience for the expulsion of the child by the natural efforts; or when we are convinced by their failure or cessation, that these are not equal to the effect, to give such assistance as the nature of the case may require; and whatever the instruments which it may be necessary to use, are, their action will be nearly the same, as if the arms had not been in the *pelvis*.

Whether these cases are completed by the natural efforts, or by the assistance of instruments, the arms of the child will be very much tumefied or bruised, and the child is for a certain time as unable to use them as if they were paralytic. But by the help of fomentations and poultices, and by moderate motion and gentle friction, their natural appearance and use are recovered in the course of a few days; at least I have not seen an instance of any permanent mischief from this cause.

When the extremities present at the time of birth, there is often a doubt whether the child be living or not, unless it can be perceived to move. Now the fact may be ascertained by the consequences of any violence, as no part of a dead child can either tumefy or change its colour, however compressed it may be, and only shews one kind of violence, that of solution of continuity.

# ON THE THIRD ORDER;

OR,

## *The Diſeaſes of the ſoft Parts which occaſion difficult Labours.*

### 1. *Suppreſſion of Urine.*

THE various affections of the urinary bladder during pregnancy, have been already mentioned. On the commencement of labour, it was ſaid that an involuntary diſcharge of the urine might be occaſioned; but there is more frequently a difficulty in voiding it, and ſometimes there is a total ſuppreſſion. The inconveniencies thence ariſing will be according to the quantity of urine retained, and to the length of time that the bladder may continue diſtended. The firſt will hinder the proper action of the *uterus*, and will be an impediment to the paſſage of the head of the child, which will not only have a leſs ſpace to paſs through, but be projected alſo out of its proper direction; and by the latter the bladder itſelf may be injured, in conſequence of the preſſure which it undergoes from the repeated actions of the *uterus*, by which it may become inflamed; and in ſome caſes in which relief was not given, it has even been ruptured, the patient being thereby deſtroyed*.

In

* See Chapman, page 143, ſee alſo Medical Obſervations and Inquiries, vol. 4.

In the beginning and courſe of labours, eſpecially of thoſe which are tedious or difficult, great attention is therefore to be paid to the ſtate of the bladder; the patient is to be frequently admoniſhed to void the urine; and in all caſes of doubt we are not to confide in any repreſentation, but are to be ſatisfied only with ſeeing the quantity of urine which has been diſcharged; error being often committed by confounding the waters of the *ovum* with the urine. By the application of the hand to the *abdomen* of the patient, it is often an eaſy matter to diſtinguiſh between the tumour of the *uterus*, and the flattened but circumſcribed tumour of the bladder, which lyes below and before that formed by the *uterus*: the patient herſelf is frequently capable alſo of diſtinguiſhing that pain which is the conſequence of the action of the *uterus*, from that which is occaſioned by the preſſure upon the diſtended bladder.

To remove that obſtacle to the paſſage of the child, which may be produced by the diſtention of the bladder; and to prevent any injury to the bladder itſelf, it is neceſſary to draw off the urine with the catheter, whenever it is retained beyond a certain time or degree. In ſlighter caſes the common catheter will anſwer the purpoſe; but when the head has been long wedged in the *pelvis*, there is not ſufficient room for that to paſs, even though

the head be elevated or preſſed towards the hollow of the *ſacrum*. But in ſuch caſes the flattened catheter contrived by my very worthy and ingenious friend Dr. *Chriſtopher Kelly*, will often paſs with eaſe and convenience. But whatever catheter it may be found expedient to uſe, or however neceſſary it may be to draw off the urine, we are to take care not to introduce the inſtrument with much force, becauſe we may do as much poſitive miſchief with the inſtrument, as we aim or wiſh to avoid. In ſome caſes, though we are aſſured that there is a great quantity of urine in the bladder, the head of the child is ſo immovably locked in the *pelvis*, that we cannot poſſibly introduce any catheter, and are therefore obliged to ſubmit to the inconveniencies which may follow the diſtention of the bladder. But if care was taken in the beginning of labour, this does not often happen; nor is it always attended with the evils we might dread, the head of the child being at length preſſed ſo low as to allow the urine to eſcape, though very ſlowly. But in all ſuch caſes it will be prudent and neceſſary to introduce the catheter before or ſoon after the expulſion of the *placenta*, that we may prevent the miſchief which might be expected to follow the diſtention of the bladder, if that was to remain many hours after the delivery.

2. *Stone*

2. *Stone in the Bladder.*

If a woman ſhould have a ſtone in the bladder, there would be no reaſon why ſhe ſhould not be with child, and proceed through her pregnancy without moleſtation. Nor, if it was of a ſmall ſize, would it be any impediment to her delivery; though if it was large, the head of the child could not paſs through the *pelvis*, or not without much trouble and inconvenience. Of this caſe I have never met with an inſtance in practice, and may therefore be allowed to conſider it as very rare, though there does not appear to be any reaſon for judging it impoſſible. I have reflected upon the caſe, and upon the conduct which it might be neceſſary to purſue, if it had occurred to me; and though it behoves me to ſpeak with reſerve, and to be ſatisfied if little confidence be placed in what I advance, it is better on the whole to give my opinion, than to leave the matter without making mention of it, or conſidering it.

In the beginning of labour, ſuppoſing there is a ſtone of a large ſize in the bladder, one of theſe conſequences muſt follow; the head of the child muſt advance before the ſtone, or the ſtone muſt be protruded before the head of the child. If the former ſhould be the caſe, we might preſume that the labour would proceed in a natural way, as if the ſtone did not exiſt; there would, at leaſt, be

no demand for the aſſiſtance of art, and no room to exerciſe it. But if the ſtone ſhould be protruded before the head of the child, our conduct muſt be regulated by the circumſtances. It ſeems reaſonable that we ſhould firſt attempt to raiſe the head in ſuch a manner, and to ſuch a degree as to allow us to return the ſtone beyond the head. But if that ſhould be found impracticable, either becauſe the head of the child was too far advanced, or firmly locked in the *pelvis*, we muſt then weigh the evils to be apprehended, from the compreſſion of the ſoft parts, that is, of the anterior part of the *vagina*, and the poſterior part of the bladder, between the head of the child, and the ſtone in the bladder; beſides the diſtraction of the parts which muſt be neceſſarily occaſioned. Whatever conduct we might purſue muſt be attended with ſome evils, and as it is only in our power to chooſe the leaſt of theſe, it ſeems better even in the time of labour, to ſuffer the evils which might follow the performance of the operation for extracting the ſtone, than to ſuffer thoſe which may be occaſioned by the compreſſion. With regard to the operation, there is both leſs difficulty and danger in women than in men, though theſe will in ſome meaſure depend upon the ſize of the ſtone. In ſome caſes alſo in which the ſtone is contained

tained in a diſtinct cell of the bladder, and could not therefore be graſped or extracted by the *forceps* when introduced; it has been propoſed to make an inciſion through the anterior part of the *vagina*, directly upon the ſtone. This operation, which may in ſome caſes be eligible, has been performed twice, by two ſurgeons of great ability and eminence in the country, and as I was informed, without occaſioning the effect to be apprehended; that of leaving a fiſtulous opening by which the urine would have been voided for the remainder of the patient's life.

3. *Excreſcences of the* Os Uteri.

Excreſcences of the *os uteri* are uſually combined with ſome degree of ſcirrhous diſpoſition of that part. It was before obſerved that excreſcences do not prevent conception, or diſturb pregnancy; but according to their ſize and ſituation, they muſt neceſſarily be obſtacles at the time of labour. The following caſe, which was curious in the circumſtances attending, as well as the nature of the complaint, I may be permitted to tranſcribe, as it was an example of an excreſcence of the largeſt ſize I have ever ſeen.

In June 1770, I was deſired to ſee a patient in the eighth month of her pregnancy, who in the preceding night had a profuſe hemorrhage. Her countenance ſhewed the effects of the great loſs of

blood

blood ſhe had ſuſtained; and from the repreſentation of the caſe given me by the gentleman who was firſt called in, I concluded that the *placenta* was fixed over the *os uteri*. On examination I felt a very large fleſhy tumour at the extremity of the *vagina*, repreſenting and nearly equalling in ſize the *placenta*, which I judged it to be. Had this been the caſe, there could not be a doubt of the propriety and neceſſity of delivering the patient ſpeedily; and with that intention I paſſed my finger round the tumour, to diſcover the ſtate of the *os uteri*; but this I could not find: and on a more accurate examination, I was convinced that this tumour was an excreſcence growing from the *os uteri*, with a very extended and broad baſis. I then concluded that the patient was not with child, notwithſtanding the diſtention of the *abdomen*, but that ſhe laboured under ſome diſeaſe which reſembled pregnancy; and that the hemorrhage was the conſequence of the diſeaſe. A motion which was very evidently perceived when I applied my hand to the *abdomen*, did not prevail with me to alter this opinion.

It was of all others a caſe in which a conſultation was deſirable, both to decide upon the diſeaſe, and the meaſures which it might be neceſſary to purſue; and ſeveral gentlemen of eminence were called in. That ſhe was actually pregnant, was proved to the ſatisfaction of every one; and it was then concluded,

concluded, that ſuch means ſhould be uſed as might prevent or leſſen the hemorrhage, and that we ſhould wait and ſee what efforts might be naturally made for accompliſhing the delivery.

No very urgent ſymptom occurred till the latter end of July, when the hemorrhage returned in a very alarming way, and it was thought neceſſary that the patient ſhould be delivered. There was not a poſſibility of extirpating the tumour, and yet it was of ſuch a ſize as to prevent the child from being born in any other way than by leſſening the head. This was performed; but after many attempts to extract the child, the patient was ſo exhauſted, that it became neceſſary to leave her to her repoſe, and very ſoon after our leaving her, ſhe expired.

We were permitted to examine the body. There was no appearance of diſeaſe in any of the abdominal *viſcera*, or on the external ſurface of the *uterus*, which was of its regular form; and when a large oval piece was taken out of the anterior part, the child, which had no marks of putrefaction, was found in a natural poſition. An inciſion was made on each ſide of the *cervix* to the *vagina*, and then a large cauliflower excreſcence was found growing to the whole anterior part of the *os uteri*. The *placenta* adhered with its whole ſurface; ſo that the blood which ſhe had loſt muſt have been diſcharged from the tumour.

The

The propriety or advantage of a practice by which the life of neither the parent or child was preſerved, ought to be conſidered; but ſuch caſes occur ſo rarely, that there is always room for animadverſion, when they are concluded. Yet the general principle of its being ever our duty to preſerve both their lives, if poſſible; or to preſerve that of the parent; or, if ſhe cannot be preſerved, then to ſave the child, if it is in our power; would have been a better guide on this occaſion, than that which was followed.

Excreſcences of a ſmaller ſize are not unfrequently met with in practice; and as even theſe are uſually accompanied with ſome degree of ſcirrhous diſpoſition of the *os uteri*, more time is required for the completion of the labours. It is alſo to be remarked, that in caſes of this kind, there is often a long continuance of the pains without any ſenſible effect; but all at once, the rigid *os uteri* yields and dilates ſpeedily and unexpectedly, or perhaps in ſome inſtances is lacerated. During labours of this kind, and after delivery alſo, the great object is to guard againſt all cauſes of inflammation, at firſt perhaps local, but afterwards extending to other parts, connected or readily conſenting with the *uterus*, and more immediately neceſſary for the functions of life.

4. *Cicatrices*

4. *Cicatrices in the* Vagina.

From diſeaſes of the ſoft parts, eſpecially from violence ſuſtained in former hard labours, the *vagina* may have become ulcerated; and when care was not taken to prevent the ſurfaces from abiding in contact with each other, the oppoſite ſides might adhere in different degrees, according to the depth and extent of the ulceration. When the ulceration is ſlight, and the inflammation is not ſo great as to bring the tumefied parts into contact, after a certain time they heal; but cicatrices being formed, the diameter of the paſſage is leſſened, and the part is left with a diſinclination to yield on any future occaſion. In ſome caſes a ſuperficial ſlough has been thrown off from the whole internal ſurface of the *vagina*, and cicatrices of an irregular kind formed from the *os uteri* to the external orifice. In other caſes there has been a cicatrice only at one part, and if this ſhould happen near the external orifice, the contraction is ſuch as to mimick an unruptured *hymen*.

Amidſt a great variety of caſes of cicatrices in the *vagina*, I have not met with one example in which they were able to withſtand the preſſure of the head of the child, if the pains were of the cuſtomary ſtrength. The labours have indeed been retarded, but they have terminated favourably. But when the difficulty ariſing from this cauſe

has been combined with other cauſes, it muſt of courſe have added to the trouble which the patient would otherwiſe have undergone. Or, if the pains ſhould ceaſe before the labour is completed, then ſuch aſſiſtance muſt be given as the caſe may require; being on our guard that we do not offer aſſiſtance before there are proofs of the neceſſity, and we are aſſured that the difficulty cannot be overcome by the natural efforts.

5. *Adheſions of the* Vagina.

Adheſions of the *vagina* are occaſioned by an increaſed degree of the ſame cauſes as thoſe which occaſion cicatrices. There may be an adheſion in women who were never pregnant, or it may be the conſequence of a ſlough thrown off after a former labour, with or without the uſe of inſtruments*. Caſes of adheſions of this kind are commonly mentioned as of very eaſy management, nothing more being required, it is ſaid, than to ſeparate the united ſurfaces with a knife, and to prevent their re-union by the introduction of a tent or canula for that purpoſe. It is true, when the adheſion has taken place near the external orifice, that it is in

* I have been informed of the caſe of a patient who was in the hands of a very ſkilful practitioner, in whom, after her delivery, which was not attended with any circumſtances of peculiar difficulty, the whole internal ſurface of the *vagina*, and all the external parts entirely ſloughed away.

in general managed without difficulty; but when the parts adhere high up in the *vagina*, then it appears from the ſtructure that there is need of the greateſt circumſpection, leſt on the one hand we perforate the bladder, or, on the other, the *rectum*, all theſe parts being drawn cloſe together. When therefore an adheſion of this kind takes place after the age of menſtruation, it is better to ſuffer the menſtruous diſcharge to be collected; and after a certain time, the part where the inciſion ought to be made, will be pointed out.

It is poſſible for an adheſion to take place after a woman is become pregnant; of courſe when labour came on, the contents of the gravid *uterus* would be impelled againſt the adhering part, which would either ſeparate or reſiſt the excluſion of the child. In the former caſe nothing would be required to be done; but in the latter, it would be neceſſary to divide the united parts by an inciſion, with great care, and to a certain degree, leaving the full ſeparation to be made by the membranes containing the waters, or by the head of the child.

6. *Steatomatoſe Tumours.*

Of this cauſe of difficult labours I have never met with an inſtance in my own practice; but the following caſe was communicated to me by a gentleman whoſe authority is unexceptionable.

A lady, after the birth of her eighth child, fell into a ſtate of bad health, with many painful and troubleſome ſymptoms, but no marked diſeaſe. Theſe were by ſome phyſicians conſidered as nervous, by others as ſcorbutic, and by others as rheumatic, or of a gouty nature. A variety of medicines were given, and means tried for her relief, but without any good effect. At the expiration of two years ſhe became again pregnant. All her former labours had been very eaſy and natural; but when Dr. ——— was called at the commencement of this, he found an obſtruction at the ſuperior aperture of the *pelvis*, which he believed could only be occaſioned by the projection of the loweſt lumbar *vertebræ*, or the upper part of the *ſacrum*. It was then ſuppoſed that ſhe had the *oſteoſarcoſis*, of which her complaints had been the ſymptoms. It was impoſſible for her to be delivered in any other way than by leſſening the head of the child. She died on the fourth day after her delivery. Leave was given to open the body, and when the *pelvis* was examined, the tumour which was imagined to be a projection of the bones, was found to be an excreſcence of a firm, fatty ſubſtance, ſpringing from one ſide of the upper part of the *ſacrum*, and paſſing acroſs ſo as to fill up the greater part of the ſuperior aperture of the *pelvis*.

It

It is probable that the complaints of this lady were occaſioned by the preſſure of this tumour upon the *uterus*; and had the real ſtate of the caſe been known before the time of labour, or even during her labour, it does not appear to have been proper, or within the bounds of the art, to have attempted or afforded her any other aſſiſtance.

7. *Enlargement of the* Ovaria.

Diſeaſes of the *ovaria*, both of the ſcirrhous and dropſical kind, eſpecially the latter, are very frequent. Either of theſe muſt generally prevent conception; but as one of the *ovaria* may be very much diſeaſed, when the other is in a perfectly healthy ſtate, inſtances ſometimes occur of women becoming pregnant under ſuch circumſtances, and then the enlarged *ovarium* may produce inconveniencies during pregnancy, or become an obſtacle to the progreſs of labour.

With the hiſtory of two caſes of this kind, I was many years ago favoured by Dr. *John Ford*, a gentleman of great ſkill and experience. In the former he was ſurpriſed to find a large and firm tumour lying between the *rectum* and *vagina*, and filling up all the concavity of the *ſacrum*, and a conſiderable ſhare of the cavity of the *pelvis*. Being convinced of the impoſſibility of the child paſſing by this tumour, which did not yield or diminiſh by the force of the pains, it was determined

that

that the patient ought to be delivered by leſſening the head of the child. The operation was performed with great care, but the patient died at the end of three weeks. When the body was opened, the tumour was found to be an encyſted dropſy of the *ovarium*, in which there was a conſiderable quantity of hair.

In the latter caſe, which in all its circumſtances reſembled the former, inſtead of leſſening the head of the child, a trocar was paſſed through the poſterior part of the *vagina*, directly into the tumour. A large quantity of water was immediately diſcharged, the tumour ſubſided, and a living child was born without any further aſſiſtance. This patient recovered from her lying-in, but ſome time after becoming hectic, ſhe died at the end of about ſix months, though from the ſymptoms it did not appear that the fever was occaſioned either by the diſeaſe or the operation.

Having related theſe two caſes, I have ſaid all which I had to advance on the ſubject, except that I have met with more than one inſtance of a circumſcribed tumour on one ſide of the *pelvis*, which I at firſt ſuſpected to be a diſeaſed *ovarium*. But as theſe tumours have always given way to the preſſure of the head of the child, the paſſage of which they have only retarded for a ſhort time, I have concluded they were formed either by ſome ſoft fatty ſubſtance,

ſubſtance, or were cyſts containing lymph caſually effuſed, and forming to itſelf a cyſt of the cellular membrane. But on taking an examination after delivery, the tumours were found to have again acquired their primitive form and ſize.

8. *Rupture of the* Uterus.

The human *uterus* is found to retain its original thickneſs during the time of pregnancy, notwithſtanding its diſtention; or to become ſomewhat thicker than it was in the unimpregnated ſtate. This thickneſs, we have therefore reaſon to think, is conſequent to ſome principle acquired, and coeval with conception. But if the whole, or any part of the *uterus*, ſhould be deprived of this principle, or affected with any diſeaſe deſtructive of its operation, then the whole, or the part ſo affected, would be mechanically diſtended, and become thinner in proportion to its diſtention; and at the time of labour, when the action exerted might be greater than the unthickened part of the *uterus* was able to bear, the *uterus* would be of courſe ruptured. Or if the *uterus* which had acquired its proper thickneſs, became affected with any diſeaſe, weakening its power, and ſpeedy in its progreſs, the texture of ſome part ſo affected might be deſtroyed, and the *uterus* ruptured by its own action in the time of labour. The *uterus* may alſo be ruptured by attempts to paſs the hand for the purpoſe of turning a child, if

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it was ſtrongly contracted; but in this laſt caſe a rupture could only happen when the force with which the hand was introduced, was combined with the proper action of the *uterus*; for no perſon has the power to force his hand through an healthy and unacting *uterus*.

Some of the cauſes of the rupture of the *uterus*, are unavoidable; for it is not within the ſphere of human abilities, to give to any part the principle by which it has the diſpoſition to perform any function; though art may excite it to action if dormant, or repreſs it when too vehement. But the two other cauſes, that which is preceded by inflammation, or that which may be occaſioned by attempts to turn the child, may be corrected or avoided, by abſtaining from the uſe of all ſuch means as are likely to act as cauſes of inflammation; or from making ſuch attempts as may be neceſſary for the purpoſe of turning a child, when the action of the *uterus* is ſtrong.

The rupture of the *uterus* is uſually accompanied with a ſenſe of ſomething giving way internally, with an inſtant vomiting of brown humour, and a total ceſſation of the pains. After theſe ſymptoms, by the application of the hand to the *abdomen*, the limbs of the child are ſo eaſily diſtinguiſhed through the integuments, as to leave no room to doubt of the accident; and if the head of the child

child be not locked in the *pelvis*, it immediately recedes, or even goes out of the reach of a common examination.

When a rupture of the *uterus* has happened, there is little chance of the patient ſurviving it; and it might be doubted, whether it would be more eligible to ſuffer the patient to die without giving her further trouble, or whether it was our duty, hopeleſs as the caſe muſt be, to paſs the hand into the *uterus*, to turn and deliver the child by the feet, or with the *forceps*, or in any way the caſe would allow. Whatever were the ſentiments of practitioners formerly, is not to us very material; but beſides ſome others of which I have been informed, a caſe has occurred to my very worthy, able, and experienced friend Dr. *Andrew Douglas*, in which though the *uterus* was ruptured, he turned the child, and the patient recovered. If no other caſe had ever occurred, I apprehend that this would be of ſufficient authority, to render it in future the indiſpenſible duty of every practitioner to act in a ſimilar manner; and bad as the chance of the patient is, to be ſtrenuous in uſing all the means which art dictates, to extricate her, if poſſible, from her danger. But for further information on this head, I refer the reader to the Eſſay on the rupture of the *uterus*, publiſhed by Dr. *Douglas*.

## SECTION.

THESE cauſes of difficult labours I have enumerated in this order, with the hope of pointing out a more uſeful method of arranging the knowledge we poſſeſs, and of removing ſome part of that obſcurity in which the practice of midwifery has been involved, and by which its further improvement hath been hindered. Two things appear in the general reſult; firſt, that the evils attending parturition are more frequently adventitious, than neceſſary and unavoidable; and ſecondly, that the native powers of the conſtitution, when not interrupted, are not only ſuperior to the common obſtructions of the proceſs, but in general, to every kind and degree of deviation from the natural courſe of labours. Yet with every prudential regard to our own conduct, and the moſt judicious regulation of that of our patient, we ſhall in practice certainly meet with caſes in which, either from the debility of thoſe powers which uſually exiſt, and which ought to be exerted; or, from the greatneſs or ſtubborneſs of the obſtructing cauſe, we ſhall be compelled by neceſſity to give artificial aſſiſtance, or the mother, or child, or both will be loſt.

Before

Before we proceed to the conſiderationof the various means which have been contrived for the relief of women in caſes of difficult parturition, it may be again obſerved, that the cauſes of difficulty are generally combined; and as there are very few inſtances of a diſeaſe, according to the ſimple definition of it, in noſological writers, ſo there are few examples of difficult labours produced by one ſingle cauſe. Together with the dribbling of the waters, there will often be a retraction of the head of the child from the ſhortneſs of the *funis*; and with great rigidity of the parts, or a ſmall *pelvis*, there may be a weak action of the *uterus*, and ſo on to an almoſt endleſs variety. One cauſe will however predominate, and of courſe become the principal object of our attention. But when by time, or art, that cauſe is removed, we muſt apply ourſelves to the removal of that which is important in the next degree; and ſometimes the ſame means may be properly uſed for the removal of difficulties proceeding from ſeveral different cauſes.

But beſides the cauſes already mentioned, there is one much more frequent than the reſt, which is the derangement of the order of the labour by an officious interpoſition, or by improper management. Upon this ſubject it would be unpardonable to make an aſſertion which is not ſupported by experience; but I am fully convinced that the far

greater number of really difficult labours to which I have been called, and I muſt not conceal the truth on this occaſion, ſome of thoſe which have been originally under my own care, were not of that denomination from any unavoidable neceſſity, but were rendered ſuch by improper management. Nor does the diſturbance of the order of a labour, depend upon the practitioner alone; for the intractability of the patient herſelf*, or of her friends and attendants, which though it may be generally founded in compaſſion to her ſufferings, may alſo ariſe from many other motives, are not rarely productive of the ſame effect.

On the part of the practitioner there is not only required much previous knowledge and preſent judgment, to diſtinguiſh in caſes of great difficulty, which of them may demand the aſſiſtance of art, and which may be reſigned to the efforts of nature; but there is no ſituation, in which there is occaſion for greater addreſs to procure the confidence and co-operation of all the parties concerned; or for more firmneſs in the purſuit of the negative conduct,

* De la part de la mere c'eſt quelquefois ſa mauvaiſe humeur, ſon impatience, ſon indocilitè, la violence et la irregularitè des mouvements.

Peu la Pratique des Accouchmens.—Livre II. Cap. 1.

conduct, which it is abſolutely neceſſary to follow. Whatever may be the reſolution of particular women, and whatever may be the general eſtimation of natural labours, every woman is impreſſed with the opinion, and the opinion is often well founded, that in difficult ones, her life muſt be preſerved by the ſkill and judgment of the practitioner, under whoſe care ſhe is placed. If therefore her confidence is ſecured, the delay to give aſſiſtance will be conſtrued into a proof that none is required, and of freedom from danger.

The diſtreſs and pain which women often endure while they are ſtruggling through a difficult labour, is beyond all deſcription, and ſeems to be more than human nature is able to bear under any other circumſtances. The great principle of all their patience and reſolution, is perhaps that deep-rooted affection of the parent to the offspring, implanted in the female mind. But the principle of ſelf-preſervation, though varying in its operation, will recur, and demand its ſhare of regard. In long and continued labours it is therefore proper by frequent alluſions to the child, to encourage and ſtrengthen the former principle, for its power is leſſened or overcome by the weight of their preſent diſtreſs; their love for their child is conquered; and the proſpect of diſtant pleaſure is not

not able to ſtand in competition with the evils of the preſent moment. With the firmeſt de termination to do what is right, they perſuade themſelves that the child is dead; that the object for which they ſhould perſevere, no longer exiſts; and the practitioner in oppoſition to his own feelings, and againſt the ſolicitation of thoſe who confide in him, is often the only advocate for the child. But his deciſion to act in caſes in which the life of a child is concerned, muſt ſtand upon a better principle than conformity to the inclinations of others; and though he might avoid preſent cenſure, or even gain preſent credit, by giving artificial aſſiſtance unneceſſarily, when the caſe comes to be reviewed, and it always is reviewed, the blame of acting precipitately in caſes which do not terminate fortunately, will be caſt upon him, and their ſatisfaction will be eſtabliſhed by the diſcovery of ſome cauſe of blame in his conduct. In the exerciſe of the moſt hazardous part of a profeſſion, perhaps in general more ſubject to cenſure than any other, it behoves us to be particularly circumſpect: and though events are often beyond the power of human controul, we may always act with intelligence, with prudence, and firmneſs; and no man's character can long be ſupported, if he is not governed by the determination to do what is right, to the beſt of his judgment and power.

But

But however averſe the practitioner may be to the uſe of ſuch means as may be dangerous to, or even deſtructive of the child, caſes muſt occur in which the aſſiſtance of art will be abſolutely needful, and the uſe of inſtruments juſtified. As correct a judgment muſt alſo be exerciſed, and equal care taken that he does not delay that aſſiſtance which may be neceſſary, ſo long, that it cannot anſwer the end for which it was given; or while he is endeavouring to preſerve the life of the child, he may loſe that of the mother alſo, which certainly is of more value.

The intentions in the uſe of inſtruments may be of three kinds. Firſt, to preſerve the life both of the parent and child: ſecondly, to preſerve the life of the parent; and thirdly, to preſerve the life of the child. The inſtruments contrived to anſwer the the firſt intention, are the *fillet*, the *forceps*, and the *vectis*. Of each of theſe, together with all the collateral circumſtances which demand our regard, we ſhall ſpeak in their turn, and then proceed to the conſideration of the other intentions.

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AN

# ESSAY

ON

# *DIFFICULT LABOURS.*

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## PART SECOND.

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# CLASS SECOND.

## *DIFFICULT LABOURS.*

## PART SECOND.

### CHAP. VIII.

### SECT. I

### ON THE FILLET, FORCEPS, AND VECTIS.

WHEN men, firſt collected into ſocieties, had provided for their ſubſiſtence, they would endeavour to amend their ſtate, by removing ſuch evils and inconveniencies as were moſt urgent, either from their importance or frequency. Next to thoſe arts by which the means of ſupport were acquired, that of medicine would be of principal conſideration, as from the nature of their employments, hunting, fiſhing, paſtoral or agricultural, men muſt have been liable to diſeaſes and to injuries,

which by accident or trial, they would learn ſome method of relieving; and he that ſhould have acquired the greateſt collection of knowledge, or the moſt dexterous method of applying it to uſeful purpoſes, would have become a phyſician. But the origin and progreſs of that branch of medicine of which we are treating, would be ſomewhat different. When the cuſtoms and manners of life were ſimple, and not much diſpoſed to produce diſeaſes, difficulty or danger in the parturition of women would ſeldom occur; and notwithſtanding the diſtreſs with which they might ſometimes be accompanied, the general termination of labours would be eaſy and ſafe. In the very few caſes which might require more than ordinary aſſiſtance, there were none to afford it; and thoſe women who could not bring forth their children by their own efforts, were ſuffered to die without any attempts being made to relieve them, according to the relations which are given of the people of ſome countries, even at this day.

As mankind advanced in civilization, the evils attending parturition would probably increaſe, though ignorance or inability to give relief might long continue; but the ſupplica-

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tions for aſſiſtance, and the affections of men, would not permit them to remain unconcerned ſpectators of the miſery of thoſe, to whom they were indebted for the chief part of their happineſs. They gave ſuch aid as their information or ingenuity enabled them to deviſe, and this, in the firſt inſtance, conſiſted of ceremonies and amulets, or medicines, to which ſome myſterious properties were attributed, as the ſkins and ſome other parts of ſerpents, the eagle ſtone, the blood-ſtone, the ſtony ſubſtance found in the head of a ſhark, with many others of the like kind; and ſuch things might ſuccour the minds of women, ſtrongly impreſſed with a ſenſe of their utility, overwhelmed at the ſame time with extreme pain and apprehenſion. In times more enlightened, for every kind of diſtreſs religion offered its conſolations, by ſoothing the mind, by teaching mankind, when oppreſſed with difficulties, to uſe their own endeavours, the neceſſity of ſubmitting to evils which could not be prevented or avoided, and by encouraging with the hope of happy events. After the diſcovery of the mechanic arts, theſe were applied to the exigencies of every occaſion; and when the ſuf-

ferings of women in child-birth could no longer be endured, attempts were made to relieve them by extracting, without regard to its ſafety, the head of a child which could not be expelled by the efforts of the mother; and for this purpoſe the firſt kind of *forceps* was invented and uſed. The ſame motives of compaſſion or affection which led to the wiſh of relieving women, would readily extend to children; and, to combine the intereſts of both, fillets and the *forceps*, now in common uſe, were contrived. When the head of a child was found to be too large to paſs through a very ſmall or a diſtorted *pelvis* with the help of ſuch contrivances, there was no relief to be obtained except the head of the child was leſſened, and for this purpoſe, perforators and crotchets of various kinds were invented. The intrepidity of ſome man ſeeing no other way of giving relief, or the deſperate reſolution of ſome woman frantic with her ſufferings, might lead to a more ſummary way of obtaining it; and, with a determination to free her from the cauſe of her miſery, or to put an end to her exiſtence, a child might have been extracted through a wound made into the part which contained

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it, and the manner of performing the Cæſarean operation would be ſhewn.

In ſome times and countries in which the *forceps* and other inſtruments of that kind were not known, or their uſe not fully underſtood, and afterward, in ſome caſes not thought ſuitable for their uſe, it became a cuſtom in many difficult labours, by whatever cauſe produced, to return the preſenting head, to paſs the hand into the *uterus*, to turn and deliver the child by the feet. But this operation of turning could only be performed under very limited circumſtances; for if the head of the child was very low in the *pelvis*, or the *uterus* ſtrongly contracted round its body, it could not be done, or not without defeating the very purpoſe for which the operation was performed, producing at the ſame time great danger to the parent. Yet caſes may occur in which by turning the child, the chance of ſaving its life is greater than can be gained by the uſe of any inſtrument, of which the following is an example.

Many years ago I attended a patient in two labours, in both of which there was a neceſſity of delivering with inſtruments, on account of the ſmallneſs and diſtortion of the *pelvis*,

and neither of the children could be preſerved. In her next pregnancy I made a propoſal to bring on premature labour, to which ſhe and her friends would not conſent, and I was diſmiſſed from my attendance. In the courſe of twelve or fourteen years ſhe had five more children, not one of which was born living. In the forty-ſixth year of her age ſhe proved with child, and again applied to me. When her labour came on, the firſt ſtage was ſuffered to proceed without interruption, but when the membranes broke, I without delay paſſed my hand into the *uterus*, and eaſily brought down the feet and body of the child; but the head being ſtopped by the narrowneſs of the ſuperior aperture of the *pelvis*, I was obliged to exert, and to continue, much force before it could be extracted. The child was born with very little appearance of life; but by the ſtrenuous uſe of the common means it was recovered. On the left parietal bone there was a depreſſion of conſiderable extent, and to my apprehenſion of full one inch in depth; but the depreſſed part gradually roſe, in the courſe of a few months the bone regained its natural form, and the child was for ſeveral years in good health.

The woman recovered without any untoward circumſtance.

But the ſucceſs of ſuch attempts to preſerve the life of a child is very precarious; and the operation of turning a child under the circumſtances before ſtated, is rather to be conſidered among thoſe things of which an experienced man may ſometimes avail himſelf in critical ſituations, than as ſubmitting to the ordinary rules of practice.

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## SECTION II.

### ON FILLETS.

The fillet uſed in the practice of midwifery is a ſingle band, intended to be fixed upon the head of a child detained in its paſſage through the *pelvis*, for the purpoſe of extracting the head.

It has been ſuppoſed that fillets were uſed in the practice of midwifery as early as the time of *Hippocrates*; but whenever they were invented, they have undergone a variety of changes,

changes, by which it was intended to gain ſome advantage, or to avoid ſome inconvenience. Fillets were conſtructed of ſilk, cotton, linen, or leather of divers kinds, ſtrengthened or rendered more commodious by the addition of cane, whalebone, wire, or very thin and narrow plates of iron, variouſly braided and worked together according to the opinion or judgment of the contriver.

The manner of applying the fillet was, by conducting it to ſome fixed point, or round the circumference of the head of a child, as high up in the *pelvis* as could be reached; then, after twiſting the two ends together to acquire a firm hold, we were taught to extract, in a proper direction, with all the force the fillet enabled us to uſe, or the neceſſity of the caſe might require.

The peculiar advantages expected to be derived from fillets were theſe. They were ſuppoſed to be applicable with great facility in every direction of the head, or when this was too high to allow of the uſe of any other inſtrument recommended with the ſame intention; to ſupply us with ſufficient power to extract the head when detained an unreaſonable time, by any cauſe,

to

to the hazard of the mother or child; and to do leſs injury to either, on account of the ſoftneſs and pliability of the materials of which they were compoſed.

But experience has fully proved that a fillet of any kind could not be applied without much difficulty and trouble; that when applied it was very apt to ſlip; that when it remained fixed, it was often inadequate to the purpoſe of extracting the head; that it created new difficulties, or added to thoſe which before exiſted, by changing the poſition of the head; and that the injury done to the mother or child was not in proportion to the hardneſs of the materials of which inſtruments were conſtructed, but according to the violence with which they were uſed.

For theſe reaſons fillets of every kind gradually declined in eſtimation, and they are now wholly neglected. They may be conſidered among the firſt attempts of art to give relief, which have been ſuperſeded by other contrivances, equally ſafe and more efficacious.

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## SECTION III.

### ON THE FORCEPS.

THE *forceps* uſed in the practice of midwifery, is an inſtrument compoſed of two equal parts, each part conſiſting of a blade and handle, ſo formed that, when applied ſeparately upon the head of a child obſtructed in its paſſage through the *pelvis*, they may be connected together, and uſed as two alternate or conjoined levers, for the purpoſe of extracting it.

*Forceps* have been made of wood or ſilver, but generally of iron properly tempered, and when uſed, ſhould be covered with ſmooth and thin leather, which without any ſignificant increaſe of bulk, renders their introduction more eaſy, and takes off, both in appearance and reality, the aſperity of the inſtrument. Each blade muſt be introduced ſeparately, but in ſuch directions, that when introduced they may be antagoniſts to each other; and there have been different contrivances to keep them fixed together.

It

It would be difficult to determine the time when *forceps* were firſt uſed, but we have very early accounts of two kinds, with one of which it was intended to extract the child, without regard to the injury which might be done to it, and with the other to extract and preſerve its life. The firſt was armed with teeth or ſharp protuberances on the internal ſurface which graſped the head; but thoſe of the ſecond kind had no protuberances, and when uſed, were clothed with linen or ſome ſoft material, to prevent their doing any injury to the child. The firſt are never uſed at the preſent time, and would have been forgotten, except for the patterns which are preſerved in the collections of thoſe who have taught the art. Of the latter kind there is an endleſs variety, but every variety regards one or other of theſe conditions; their length, their ſtrength, or their different degrees, or kinds of curvature.

From the length of the *forceps* formerly made, we may conclude that it was uſual to apply them before, or as ſoon as the head of the child had entered the ſuperior aperture of the *pelvis*; and from their ſtrength, that it was thought neceſſary to provide for the exertion

exertion of great force. The common curvature was varied according to the opinion entertained of the form and dimenſions of the head of a child at the time of birth; but the lateral curvature was given for the accommodation of the inſtrument to the form of the *pelvis*, or for leſſening the preſſure upon, and of courſe the danger of lacerating, the external parts, when the child was extracted. As the *forceps*, though well applied, ſometimes ſlipped from the head when brought into action, a groove, with a ſlight eminence on each ſide, was propoſed to be made on that part of the internal ſurface which embraced the head, to prevent that accident, and to allow of a change in the manner of acting, by admitting ſome degree of rotation.

*Forceps* have alſo been contrived in ſuch a manner that one blade received the other, and theſe were called male and female. They have alſo been made with hinges or joints between the handle and blade of each, anſwering no other purpoſe than that of concealing them, that there might be an opportunity of performing the operation with them in a clandeſtine manner. But as the reaſons for uſing the *forceps* will juſtify the operation to the

the moſt ſevere examiner; and as theſe may be explained without adding to the terror or diſtreſs either of the patient or her friends, there never can be occaſion for concealment; which, in theſe caſes, ought to raiſe a ſuſpicion of the judgment or integrity of thoſe who ſhould attempt to practiſe it. There is, in truth, more frequently a neceſſity of reſiſting the ſolicitations both of patients and friends, urging us to the uſe of inſtruments, than of perſuading them to comply with our propoſals when we think them needful.

Beſides the different kinds of *forceps* which conſiſt of two blades, others have been contrived with three. By thoſe who ſuppoſed labours to be chiefly obſtructed or rendered difficult by the inflexion of the *os coccygis*, a third blade was added for the purpoſe of raiſing the head of the child over that part. But thoſe who ſuppoſed difficulties to be occaſioned by the *ſacrum* jetting, and of courſe projecting the head of the child over the *ſymphyſis* of the *oſſa pubis*, added a third blade for the purpoſe of bringing back the head thus projected, into a right line with the cavity of the *pelvis*, before any attempt was made to extract

tract it with the other two blades. Whatever credit may be due to the authors of these contrivances for their ingenuity, the third blade has certainly been added on erroneous principles; and *forceps* thus constructed, would not only be embarrassing in practice, but in every case, as far as can be judged, useless or injurious.

It is remarkable that *forceps* were made of an unnecessary length, when we were forbid to apply them before the head of a child had descended very low into the *pelvis*; and they were made very strong, when it was well understood that far less force than they enabled us to use, could be exerted with propriety or safety. They were however by degrees made shorter and less cumbersome, and about the year 1748, Dr. *William Smellie*, who was eminent in practice, and as a teacher of midwifery in *London*, altered them, and brought into general usage a kind of *forceps*, more convenient than any before contrived. These before they are curved do not measure more than twelve inches from the end of the handle to the extremity of the blade; and, when properly curved, little more than eleven inches, of which the handle measures near five inches.

The

The wideſt part of the blade meaſures about one inch and five eighths, and this gradually declines towards the handle, preſerving at the ſame time the flatneſs of the blade till it meets the handle. Being ſimple in their conſtruction, applicable without difficulty, and equal to the management of every caſe in which the *forceps* ought to be uſed, I have adapted the following rules to them. But if *forceps* of any other kind ſhould be preferred, though the principles will hold good, the rules muſt be varied, according to the diſcretion of the perſon who may perform the operation.

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## SECTION IV.

### GENERAL OBSERVATIONS.

It has been long eſtabliſhed as a general rule in this country, that the uſe of inſtruments of any kind ought not to be allowed in the practice of midwifery from any motives of eligibility. But when, from any cauſe, the parent becomes unequal to the expulſion of the child, the aſſiſtance of art,

by whatever means it can be afforded, is juſtifiable by neceſſity; becauſe without ſuch aſſiſtance the parent would die undelivered, and with her life, that of the child would alſo be inevitably loſt. Yet it behoveth every perſon who may uſe inſtruments in the practice of midwifery, to be well convinced of this neceſſity before they are uſed, and to be extremely careful in their uſe; that he does not create new evils, or aggravate thoſe which might be exiſting. But though it be our duty to avoid the uſe even of thoſe inſtruments which are intended to be employed without injury either to the mother or child, it would, on the other hand, be abſurd to defer their uſe till the child were dead, and the mother reduced to a ſtate, not of apprehended, but of real danger; or, which is worſe, that if ſhe ſhould ſurvive, her life would be rendered miſerable from the conſequences of miſchief done before the inſtruments were uſed.

When it is propoſed to deliver women with the *forceps*, the intention is, to ſupply, by their means, the total want, or deficiency of the natural pains of labour; in other words, to extract the head of a child which cannot

be

be expelled by the efforts of the mother. But ſo long as theſe efforts continue with any degree of vigour, there is always reaſon to hope that they will ultimately accompliſh the effect of expelling the child without any artificial aſſiſtance. We are moreover to recollect, that in labours of long continuance there will often be a temporary ceſſation of the pains, without any apparent reaſon or alarming ſymptoms; but that ceſſation of the pains which is the conſequence of long continued, fruitleſs action, and of great debility, is to be conſidered as the only juſtification of the uſe of the *forceps*.

Before the completion of the firſt ſtage of a labour, that is, before the *os uteri* be completely dilated, and the membranes broken, the uſe of the *forceps* can never come under contemplation. Becauſe the difficulties before occurring, may depend upon cauſes which do not require their uſe; or, if required, they could not be applied with ſafety or propriety before thoſe changes were made.

There is infinitely greater difficulty in deciding upon the proper caſe and time when the *forceps* ought to be applied, than in applying or uſing them; but it is univerſally

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agreed, that the lower the head of the child has deſcended into the *pelvis*, the eaſier will their application be, and the operation with them more certain and ſucceſsful. With a view to this obſervation, a practical rule has been formed, that the head of a child ſhall have reſted for ſix hours, as low as the *perinæum*, that is in a ſituation which would allow of their application, before the *forceps* are applied, though the pains ſhould have ceaſed during that time. This, with other rules, was intended to prevent the raſh or unneceſſary uſe of the *forceps*, and certainly time is, in theſe caſes, a very good corrector of practice.

The *forceps* ought to be applied over the ears of the child, becauſe when thus placed, there is the leaſt likelihood of doing injury to the child, and they enable us to act with the greateſt advantage and ſafety to the mother. It muſt therefore be improper to attempt to apply them before an ear can be felt, either becauſe the head is too high to allow us to reach that part, or becauſe it is ſo cloſely locked in the *pelvis*, that there is not ſufficient room to paſs the finger for that purpoſe between the head of the child and the *pelvis*. If an ear of the child can be felt, the

caſe

caſe is always manageable with the *forceps*; but when the queſtion, whether they ought to be applied, comes under conſideration, the ears are not turned to the ſides of the *pelvis*, but that ear which is to guide us will be found towards the *pubes*. However we are always to remember that the *forceps* are not to be applied becauſe we have the power of uſing them, but becauſe the neceſſity of the caſe is ſuch as to require their uſe. But caſes ſometimes occur in practice in which we may deſpair of the ability of the mother to expel the child; and which, though not ſuch as have been ſtated as ſuitable for the uſe of the *forceps*, become ſuitable, merely by waiting a certain number of hours, and a repetition of the ſlight efforts of the parent. In that deſponding ſtate with which every tedious and difficult labour is accompanied, I have alſo found the patient very much encouraged by having ſome diſtant time held up to her when ſhe ſhould be aſſiſted, if the labour were not before concluded: as this encourages her, by giving to her imagination a period to her ſuffering.

Every change in the poſition of the head, and every alteration in the conſtruction of the

*forceps* from thoſe already ſtated, will require ſome difference in the manner of applying and uſing them. But the preference, which ought in reaſon to be given, of one kind of *forceps* to another, is merely becauſe one inſtrument may be more handy and convenient than another: for an intelligent and ſkilful man would be able to apply and uſe thoſe of any form or ſize, in ſuch a manner that they ſhould anſwer his purpoſe; as an expert ſurgeon would be able to amputate a limb with a knife of any kind. No conſideration of advantage to be gained by inſtruments of any particular ſtructure ought to leſſen our attention, as the ſucceſs of every operation muſt neceſſarily depend upon the juſtneſs of the idea entertained of it in the mind of the perſon who may perform it, and the dexterity with which the inſtrument may be guided by his hands.

When we have determined on uſing the *forceps* according to the preceding obſervations, corrected by our own judgment; and when we have repreſented our opinion, and explained the reaſons for it to the friends of the patient, as is cuſtomary in all other operations, we muſt prepare for this in the following

ing

ing manner:—The patient is to be placed upon her left ſide, acroſs the bed on which ſhe is laid, with her knees drawn up to the *abdomen*, and a pillow placed between them, and very near to the edge of the bed; that we may be able to reach the patient with all convenience, and poſſeſs the free and uninterrupted uſe of our own hands. The inſtruments, being warmed in water, and ſmeared with ſome unctuous application, are to be ſo placed that they can be readily taken hold of by ourſelves, or handed to us by an aſſiſtant.

## SECTION V.

### ON THE APPLICATION OF THE FORCEPS.

The firſt part of the operation conſiſts in paſſing the fore-finger of the right hand between the *oſſa pubis* and the head of the child to the ear; then taking the part of the *forceps* to be firſt introduced, by the handle, in the left hand, the point of the blade is to be ſlowly conducted between the head of the child and the finger, till the inſtrument touches the ear.

There can be no difficulty or hazard in carrying the inſtrument thus far, becauſe it will be guided, and in ſome meaſure ſhielded, by the finger. But the farther introduction muſt be made with a ſlow ſemi-rotatory motion, keeping the point of the blade cloſe to the head of the child, by raiſing the handle towards the *pubes*. In this manner the blade muſt be carried along the head till the lock reaches the external parts near the anterior angle of the *pudendum*.

The point of the blade, while introducing, ſometimes hitches upon the ear of the child, and then it requires a little elevation, which is given by raiſing the handle; but when it has paſſed the ear, and is beyond the guidance of the finger, ſhould there be any check to the introduction either of this or the other blade, it ſhould be withdrawn a little, to give us an opportunity of diſcovering the cauſe of the obſtacle, which we muſt never ſtrive to overcome with violence. When the firſt blade is properly introduced, it muſt be held ſteadily in its place by preſſing the handle towards the *pubes*, and it will be a guide in the introduction and application of the ſecond blade.

Let

Let the ſecond blade be introduced in this manner. Keep the blade firſt introduced in its place, with the two leſſer fingers of the left hand, and carry the fore-finger of the ſame hand, between the *perinæum* and head of the child, as high as you can reach. Then take the ſecond blade of the *forceps* by the handle, in the right hand, and, conveying the point between the finger placed within the *perinæum*, and the head of the child, conduct the inſtrument with the precautions before mentioned, ſo far that the lock ſhall touch the anterior edge of the *perinæum*, or even preſs it a little backwards. In order to fix the two blades thus introduced, that which was placed towards the *pubes* muſt be ſlowly withdrawn, and carried ſo far backwards, that it can be locked with the ſecond blade retained in its firſt poſition: and care muſt be taken that nothing be entangled in the lock by paſſing the finger round it. When the *forceps* are locked, it will be found convenient to tie the handles together, with ſufficient firmneſs to prevent them from ſliding or changing their poſition, when they are not held in the hand, but not in ſuch a manner

as

as to increaſe the compreſſion upon the head of the child.

Should the blades of the *forceps* be introduced ſo as not to be oppoſite to each other, they could not be locked; or if when applied the handles ſhould come cloſe together, or be at a great diſtance from each other, they would probably ſlip, or there would be a failure of ſome kind in the operation, as the bulk of the head would not be included, or they would be fixed on ſome improper part of the head; though allowance is to be made for the difference in the ſize of the heads of children. But if a caſe be proper for the *forceps*, if they be well applied, and we were to act ſlowly with them, there would not be much riſk of failure or diſappointment.

The difficulty of applying the *forceps* is uſually occaſioned by attempting to apply them too ſoon, or by paſſing them in a wrong direction; or by entangling the ſoft parts of the mother between the inſtrument and the head of the child.

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## SECTION VI.

### ON THE ACTION WITH THE FORCEPS WHEN APPLIED.

It was before obſerved that the *forceps* when applied and fixed upon the head of a child, might be conſidered as a compound inſtrument which allowed of a ſeparate action with either of the parts of which it was compoſed; or of a conjunct action, as if the two parts formed one inſtrument. The ſeparate action with either part will be on the principle of the lever; but that with both the blades will be ſimple traction. Yet in practice we ſhall find very few caſes in which it will not be neceſſary to exerciſe or to combine both theſe kinds of action.

As it is the intention, when the *forceps* are uſed, to ſupply with them the total want or inſufficiency of the natural pains of labour, the whole power or force which the inſtrument enables us to uſe, ought not to be exerted in the firſt inſtance, but ſuch a degree as any individual caſe may require; firſt trying a moderate degree of force, and increaſing it ſlowly and deliberately, according to the exigence

exigence of each caſe. Becauſe the impediment may not be great, and the point of obſtruction may exiſt only at one part; and that being ſurmounted by one, or a few actions with the inſtrument, there would be no cauſe for acting any more. In ſome caſes alſo, though the pains had entirely ceaſed, they will return with force ſufficient to expel the child, from the irritation made by the mere application of the inſtrument. But when the *forceps* have been applied, they ſhould not be removed before the head is expelled, leſt the pains ſhould ceaſe, and we ſhould be obliged to apply them again.

The effects of the *forceps*, or the conſequences which reſult from their action, are theſe; compreſſion of the head, deſcent of the head, inclination of the face to the hollow of the *ſacrum*, extraction of the head. As the deſcent of the head precedes the inclination of the face to the hollow of the *ſacrum*, it would be improper to attempt to change the poſition of the head before it has deſcended, and it is afterwards unneceſſary; becauſe if the action with the *forceps* be ſlow, and, according to the direction of the handles, the poſition of the head becomes altered in proportion to its deſcent, without

any

any aim on the part of the operator, and without his guidance.

When the *forceps* are firſt locked, they are placed far backwards, with the lock cloſe to, or juſt within the internal ſurface of the *perinæum*; and they can have no ſupport backwards, except the little which is afforded by the ſoft parts. The firſt action with them ſhould therefore be made by bringing the handles, graſped firmly in one or both hands to prevent the inſtrument from playing upon the head of the child, ſlowly, towards the *pubes*, till they come to a full reſt. Having waited a ſhort interval with them in that ſituation, the handles muſt be carried back in the ſame ſlow but ſteady manner to the *perinæum*, exerting, as they are carried back, a certain degree of extracting force; and after waiting another interval, they are again to be carried towards the *pubes*, according to the direction of the handles. Throughout the operation, eſpecially the firſt part, the action of that blade of the *forceps* originally applied towards the *pubes*, muſt be ſtronger and more extenſive than the action with the other blade, this having no *fulcrum* to ſupport it, and chiefly anſwering the purpoſe of regulating the action

with the other blade. If there were any labour pains when the operation was begun, or ſhould they come on in the courſe of it, the *forceps* ſhould only be acted with during the continuance of the pains; the intention being not only to ſupply the want or inſufficiency of the pains, but to imitate alſo the manner in which they return.

By a few repetitions of this alternate action and reſt before deſcribed, we ſhall ſoon be ſenſible of the deſcent of the head; and it will be proper to examine very frequently, to know the progreſs made, that we may not uſe more force than needful, nor go on with more haſte than may be expedient or ſafe. In every caſe we ought to proceed ſlowly and circumſpectly, not forgetting that a ſmall degree of force, continued for a long time, will in general be equivalent to a greater force haſtily exerted, and with infinitely leſs detriment either to the mother or child. But after ſome time, ſhould we not perceive the head to deſcend, the force hitherto uſed muſt be increaſed, till it be ſufficient to overcome the obſtacles to the delivery of the patient.

It was before obſerved, as the head of the child deſcended, that the face would be accordingly

cordingly turned towards the hollow of the *ſacrum*, without any aim or aſſiſtance on our part. Of courſe the poſition of the handles of the *forceps*, and the direction in which we ought to act with them ſhould alter; for they becoming firſt more diagonal or oblique, with reſpect to the *pelvis*, and then lateral, every change in their poſition will require a differently directed action, becauſe the handles ſhould ever be antagoniſts to each other. In proportion alſo to the deſcent of the head, the handles of the *forceps* ſhould approach nearer to the *pubes*; ſo that in the beginning of the operation, though we acted in the direction of the cavity of the *pelvis*, towards the concluſion we ſhould act in that of the *vagina*. When we feel that we have the command of the head by its being cleared of the *pelvis*, and the external parts begin to be diſtended, we ought to act yet more ſlowly, eſpecially in the caſe of a firſt child, or there would be great danger of a laceration of the ſoft parts; and this can only be prevented by acting very deliberately, and in the direction of the *vagina*; by giving the parts time to diſtend; by duly ſupporting the *perinæum*, which is the part chiefly in danger, with the palm of the hand; by

by ſoothing and moderating the hurry and efforts of the patient; and, in ſome caſes, by abſolutely reſiſting for a certain time the paſſage of the head through the external parts. When the head of the child is born the *forceps* are to be removed, the delivery being completed as far as their aſſiſtance was required, and the remaining circumſtances are to be managed as if the labour had been natural.

On the whole it appears that neceſſity, and not any ſenſe of eligibility or expediency, will juſtify the uſe of the *forceps*; that when ſuch neceſſity exiſts, their uſe is not only juſtifiable but highly advantageous; that with care they may be ſafely applied; that ſlowneſs and ſteadineſs in our action with them will effectually ſecure both the parent and child againſt untoward accidents; but that no ſkill or knowledge can prevent miſchief or diſappointment, if the operation with them be performed with hurry or violence.

## SECTION VII.

### ON THE APPLICATION OF THE FORCEPS, UNDER VARIOUS CIRCUMSTANCES.

We have before conſidered the manner of applying and uſing the *forceps*, when the head of the child preſented in the moſt natural way, that is, with the face inclining towards the *ſacrum*. But they may be equally neceſſary in other poſitions of the head, that eſpecially which is in the next place moſt frequent, when the face is inclined towards the *pubes*. This poſition is diſcoverable by the readineſs with which we can feel the greater fontanel in a common examination, by the direction of the ear, and often by feeling diſtinctly the features of the face tending towards the *ſymphyſis*.

It was before obſerved, that this poſition of the head only conſtituted a variety of natural labours, as far as poſition was concerned in the definition. We are not, therefore, to be guided in our opinion of the propriety of uſing the *forceps* by any poſition of the head

of the child, but by the neceſſity of any caſe, proved by the abſolute inability of the mother to expel the child. Should ſuch neceſſity exiſt with this poſition of the head, the *forceps* are to be applied, in the manner before deſcribed, over the ears of the child. But when they are applied we muſt act with them with the greateſt caution; for, having a different and leſs perfect hold of the head, they are apt to ſlip, and, acting with leſs advantage, the operation, in this poſition of the head, muſt be more precarious. But if we ſucceed, when the head, thus ſituated, is brought ſo low as to diſtend the external parts, there will of courſe be greater danger of a laceration, if we are ever ſo much upon our guard; becauſe, in extracting the head, the chin of the child ſhould be cleared of the *oſſa pubis*, before the hind head is ſuffered to ſlide over the *perinæum*, which will very much increaſe the diſtention, and produce the ſame effect as if the arch of the *oſſa pubis* was too ſmall to receive the head of the child.

The ſame obſervations are alſo generally true when the face of the child preſents; or when, together with the head, there are one or both arms. For though in ſuch caſes there might

be

be a neceſſity for, and a propriety in, uſing the *forceps*, the operation with them would neither be ſo certain or eaſy as in the poſition of the head firſt ſtated.

In labours attended with convulſions, or dangerous hemorrhage; or when from any other urgent cauſe it may be neceſſary to haſten the delivery of the patient, to free her from immediate danger, ſhould the *forceps* be uſed, the general rules will be ſufficient to guide us, varying and ſuiting our conduct to the exigence of any particular caſe.

Laſtly, when there are ſigns of imminent danger, however averſe we may be to the uſe of inſtruments, we may be induced to try the *forceps*, though a caſe might not be altogether ſuch as we might chooſe for their application; merely to take an indifferent chance of ſaving the life of a child, which muſt otherwiſe be inevitably loſt. In ſuch caſes, we muſt advert to the general principle, and make our attempts in a manner conſiſtent with the ſafety of the parent; and, from motives of prudence, prepare the friends for that diſappointment which it may not be in our power to prevent.

## SECTION VIII.

## ON THE VECTIS.

THE *vectis* uſed in the practice of midwifery is an inſtrument conſiſting of one blade, ſlighty curved, and a handle, ſimilar in form to one of the blades of the *forceps*.

The true origin of this inſtrument, or time when it was firſt diſcovered, is not known; but before any accounts of the *vectis* were publiſhed, ſome difficult caſes were recorded, in which women had been delivered with one blade of the *forceps*, which might then be well conſidered as a *vectis*, though not called by that name. But when only one blade of the *forceps* had been uſed, the operation was mentioned as ſomething extraordinary, to ſhew perhaps the judgment or ſkill of the perſon who performed it, and not as leading to a rule of practice. It is probable that the inſtrument uſed by the *Chamberlens* in the laſt century was the *vectis*; but this is conjecture, for, after much inquiry, I have not been able to diſcover that any of them

them left either a pattern or deſcription of the inſtrument which they uſed. In the ſecond volume of *Heiſter*'s Surgery there is a delineation of a true *vectis*, recommended to him by *Palfyn*, a ſurgeon of eminence at *Ghent*; but neither this inſtrument nor its deſcription engaged much attention, nor was the *vectis* generally known before the year 1750. For though it had been uſed before that time by *Rhonhuyſen*, a ſurgeon at *Amſterdam*, after whoſe name it has been ſince called, it was reſerved by him with great ſecreſy, to his own credit and advantage; and, after his death, it became the property of his only daughter, from whom it was purchaſed by *De Bruyn*, an eminent ſurgeon of the ſame place. It appears that *De Bruyn* concealed the ſecret with as much caution as *Rhonhuyſen*; or that he inſtructed ſtudents in the uſe of the *vectis* at a conſiderable price, and with an obligation not to divulge to others what he taught them. The names of other gentlemen who changed or improved the inſtrument ſoon became known; and, annexed to a paper written on this ſubject by the celebrated profeſſor *Camper*, in the fifteenth volume of the Memoirs of the Royal Academy

of Surgery, is a plate repreſenting the *vectes* uſed by *Rhonhuyſen*, *Boom*, and *Titſing*.

The advantages ariſing from the uſe of the *vectis* in the hands of *De Bruyn*, oſtentatiouſly urged, appearing to be very great, *Viſcher* and *Vander Pol*, two phyſicians at *Amſterdam*, from motives of pure benevolence, purchaſed the ſecret from *De Bruyn*, in the year 1753, and immediately publiſhed a deſcription of the inſtrument, with directions for uſing it; but none of the papers printed on this ſubject in the Dutch language have ever been tranſlated into our own. While the *vectis* remained a ſecret, the reports of the benefits obtained by it were probably much exaggerated, eſpecially thoſe of *De Bruyn*, though *Van Swieten* ſays he was an honeſt man; but, when it was divulged, and the poſitive and comparative merits of the *vectis* ſtrictly examined, it retained its credit and eſtimation, in the opinion of many competent judges, in different parts of Europe.

When the *vectis* was very much uſed, and highly eſteemed, at *Amſterdam*, as an invaluable improvement in the practice of midwifery, the *forceps* was the favourite inſtrument in this coun-

try, eſpecially as altered by *Smellie*, who was then the principal teacher of the art in *London*. But the chief practice in this city was ſucceſſively in the hands of Dr. *Bamber*, *Middleton*, *Neſbit*, *Cole*, and *Griffith*, ſome, if not all of whom, preferred the *vectis* to the *forceps*. To thoſe gentlemen ſucceeded Dr. *John Wathen*, a man of great ingenuity and moſt pleaſing manners, who reduced the ſize of the *vectis*, and frequently uſed it with a dexterity that has aſtoniſhed me. In the year 1757, that moſt excellent charity for delivering poor women at their own habitations was eſtabliſhed, and Dr. *John Ford* was the firſt phyſician appointed to conduct it. On every occaſion which required inſtruments of this kind Dr. *Ford* uſed the *vectis*; and his coadjutors and ſucceſſors, Drs. *Cooper*, *Cogan*, *Douglas*, *Sims*, *Denniſon*, and *Squire*, with many others, have followed his example. From the deſerved reputation of theſe gentlemen, who have at all times expreſſed their approbation of the *vectis* in preference to the *forceps*, many have been induced to try it, and the general opinion of its utility has increaſed. At the preſent time, all who are engaged in the practice of midwifery would

conſider themſelves as deficient, if they were not acquainted with the ſtructure and manner of uſing the *vectis*; and ſome who, from education or habit, continue to uſe the *forceps*, are very willing to allow the equal, if not ſuperior, value of the *vectis*.

## SECTION IX.

### ON THE DIFFERENT KINDS OF VECTES.

The firſt *vectis* of which we had any knowledge was that of *Palfyn* before mentioned. The inſtrument purchaſed by *Viſcher* and *Vander Pol* was made public in a pamphlet written in the Dutch language. In the account given by *Camper*, there appears to be ſome difference in the form, length, manner, and degree of curvature of the *vectes* uſed by *De Bruyn*, *Boom*, and *Titſing*. But if the power of the inſtrument was preſerved, and the general principle of uſing it followed, it is probable that all thoſe who uſed the *vectis* thought themſelves at liberty to alter its form or to vary its dimenſions.

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When the *vectis* was firſt known in this country, that deſcribed by *Heiſter* was preferred to thoſe recommended by the ſurgeons at *Amſterdam*. The *vectis* uſed by Dr. *Cole* was, like one blade of the *forceps*, ſomewhat lengthened and enlarged. That of Dr. *Griffith* was of the ſame kind, with a hinge between the handle and blade; and that of Dr. *Wathen* was like *Palfyn*'s, but with a flat handle, and a hook at the extremity of the handle, which prevented its ſlipping through the hand, and might be occaſionally uſed as a crotchet. Many other changes have been made in the conſtruction of the inſtrument, but the *vectis* uſed by the gentlemen of the charity before mentioned is of the following dimenſions:

The whole length of the inſtrument, before it is curved, is twelve inches and a half.

The length of the blade, before it is curved, is ſeven inches and a half.

The length of the blade, when curved, is ſix inches and a half.

The wideſt part of the blade is one inch and three quarters.

The weight of the *vectis* is ſix ounces and a half.

The handle is fixed in wood.

From

From this deſcription, any perſon acquainted with the *forceps* could find no difficulty in forming a juſt idea of the *vectis*, or an artiſt in making it. It appears alſo that a ſingle blade of the *forceps* might, in many caſes, be uſed not inconveniently, inſtead of any other *vectis*, and would generally anſwer the purpoſe without the trouble of introducing the ſecond blade, as I have often experienced.

With reſpect to the part of the blade of the *vectis* which ought to be curved, and the degree of curvature, there has been ſome difference of opinion; but this muſt relate either to the eaſe of introducing, or the advantage of acting. With a ſmall degree of curvature, diffuſed through the blade, the inſtrument may be moſt eaſily introduced, nor can the degree of curvature required, on any principle, be very great. But if, together with the power of the lever, we aim at acquiring much extracting force, the curvature ſhould be ſomewhat increaſed; becauſe the two centres, on which the force uſed would reſt, would be at thoſe parts of the head on which the inſtrument might bear, and the part on which it would reſt, whether the ſides of the *pelvis* or the hand of the operator.

For

For rendering the introduction of the inſtrument more eaſy, and for preventing all the inconveniences which might ariſe from the difference of curvature, Dr. *Aitken*, of *Edinburgh*, contrived a *vectis*, which he has fancifully called the *living lever*. When this is at reſt it is quite ſtraight; but while it is introducing, by turning a ſcrew in the handle, the blade is made in ſuch a manner as to bend gradually forwards as the inſtrument is advanced, ſo that the extremity of the blade is always kept cloſe to the head of the child, of whatever dimenſions that may be. There is infinite ingenuity in the contrivance; but of the effect in practice I cannot ſpeak, having never tried this inſtrument. But a gentleman informed me that, in a trial he made, the chain, on which the mechaniſm chiefly depends, broke, and he was obliged to finiſh the operation with a common *vectis*.

To leſſen the preſſure made by the inſtrument, when in action, upon the parts of the mother, on which it might bear, ſome perſon contrived two holes on a part of the blade, near the handle, through which a ſtrong ribband or tape was to be paſſed, which being afterwards tied and pulled firmly, when the inſtrument

inſtrument was acted with, was ſuppoſed to confine it firmly to the head of the child, and prevent or leſſen the preſſure which might otherwiſe be made upon the parts of the mother; but it appears that the ſame end may be anſwered better by the dexterous management of the inſtrument than by this contrivance.

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## SECTION X.

### ON THE COMPARISON OF THE VECTIS WITH THE FORCEPS.

The general principle of practice, that the uſe of no inſtrument is to be allowed, except in caſes of abſolute neceſſity, ought not to be infringed, becauſe we entertain a high opinion of any inſtrument, or becauſe we may have acquired dexterity in uſing it. That principle, founded in common ſenſe as well as medical knowledge, and confirmed by daily experience, muſt be held inviolable. The real value of any inſtrument will be ſhewn by its efficacy to anſwer the purpoſe for which it may be uſed, and by the convenience with which

which it can be managed, when its uſe is required.

There has been much verbal diſpute among thoſe who vindicated the ſuperiority of the *vectis* to the *forceps*, and thoſe who maintained the long eſtabliſhed credit of the *forceps* againſt the encroachments of the *vectis*: but the compariſon between the two inſtruments has never been brought fairly to an iſſue, which might have been done by a diſcuſſion of the two following queſtions.

Is it poſſible to deliver a woman, ſafely, with the *forceps*, in any caſe not manageable with the *vectis*?

Is it poſſible to deliver a woman, ſafely, with the *vectis*, in any caſe not manageable with the *forceps*?

We may take it for granted, that many caſes occur in practice, in which either of theſe inſtruments may be uſed indiſcriminately, with equal ſafety, advantage, and eaſe, allowing for the dexterity which may be acquired by the habit of uſing either inſtrument. But I do not recollect that thoſe who have preferred the *forceps* have aſſerted that they could deliver a woman, in any caſe of difficulty not manageable with the *vectis*; and, as far as my experience enables me to judge, ſuch

ſuch a claim in favour of the *forceps* could not be ſupported. The debate on this point of the queſtion has not turned upon the ſuperior efficacy, but upon the greater ſafety and facility with which the *forceps* might be uſed. I have not heard of any caſe in which, after being foiled with the *vectis*, the operator was able to ſucceed with the *forceps*; though it is worthy of notice, that thoſe who are accuſtomed to the uſe of the *forceps* only, think themſelves at liberty to depreciate the *vectis*; and thoſe who do not uſe them, ſpeak of the *forceps* in terms bordering on contempt.

With reſpect to the ſecond queſtion, we will take the facts, and relinquiſh the arguments, uſed by thoſe who have preferred the *vectis* to the *forceps*; which I allow ſometimes to have been extravagant. If any confidence is to be placed in medical reports, it appears that many caſes have occurred in which, after the introduction of the firſt blade of the *forceps*, it has been extremely difficult, or impoſſible, without the hazard of miſchief, to introduce the ſecond blade, and the operation has been performed with the ſingle blade, uſed as a *vectis*. Of this I have known and been informed of ſeveral inſtances. It appears alſo,

alſo, that before the head of the child has been ſo low down as was ſtated to be eligible for uſing the *forceps*, that the *vectis* has ſometimes been readily applied, and ſafely and effectually uſed, when the neceſſity of ſome particular caſe required it. When the head of a child has been locked in the *pelvis*, the ſame neceſſity exiſting, when there was not ſpace ſufficient to admit the two blades, or more force perhaps been required than the *forceps* enabled us to exert, and we ſhould otherwiſe have been compelled to leſſen the head, it has been feaſible to apply the *vectis*, and the patient has been ſafely delivered, with a probable chance of preſerving the life of the child. Moreover, in all the deviations from that poſition of the head, which is moſt natural, as when it is turned with the face towards the *pubes*, or when the face preſents, in which it is allowed that the *forceps* cannot be uſed with advantage or certainty; in all ſuch caſes, the *vectis* may be applied and uſed both with ſafety and efficacy. From this ſtatement it may be preſumed, that the *vectis*, prudently uſed, is, in every caſe, an equally ſafe and efficacious inſtrument with the *forceps*, and a better adapted inſtrument in many

many caſes which occur in practice. It is with this perſuaſion that ſeveral teachers of the art of midwifery in London, at the preſent time, never uſe the *forceps*, or ſpeak of them in their lectures.

## SECTION XI.

### ON THE MANNER OF USING THE VECTIS.

By the firſt accounts it appears that the *vectis* was recommended, not only in ſuch caſes as were thought fit and ſuitable for the *forceps*, but to ſuperſede the neceſſity of leſſening the head of the child; it was, in ſhort, aſſerted, that no other aſſiſtance could, in any caſe, be required, beyond that which we were enabled to give with the *vectis*. But if thoſe accounts were allowed to be true, they would prove the miſerable ſtate of the principles and practice of midwifery at the time, and in the country in which they were written, in much ſtronger terms than they would deſcribe the excellence of the inſtrument.

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The general condition and circumſtances of labours before ſtated, as requiring the uſe of the *forceps*, will hold good, and with equal propriety, when the *vectis* is intended to be uſed; and the rules already given for the *forceps* will ſhorten what we have occaſion to ſay reſpecting the manner of uſing the *vectis*. For though this inſtrument might be uſed when the head of the child was high in the *pelvis*, or even when that was firmly locked in the *pelvis*, in caſes of great emergency, ſucceſs in the management of ſuch caſes depending upon much previous knowledge and experience with the inſtrument, I dare not attempt to form a preciſe rule for the extent of our conduct with the *vectis*. But when, without regard to the facility with which the *vectis* may be introduced, or any other conſideration except the neceſſity of the caſe, under the circumſtances before ſtated, we have determined upon uſing this inſtrument, the patient being placed in the ſame ſituation, and every thing prepared as when the *forceps* are to be uſed, the operation is to be performed in the following manner:

Paſs two fingers, or the fore finger of the right hand, to the ear of the child, and, introducing the *vectis* between the fingers and

the head of the child, conduct it ſlowly forwards till the point of the *vectis* reaches the ear, wherever that may be. Then advancing the inſtrument as if it was a blade of the *forceps*, carry it on till, according to your judgment, the extremity of the blade may reach as far, or a very little beyond, the chin of the child; when the line of the head, on which the inſtrument reſts, will be in a ſtraight direction from the *vertex*, over the ear, to the chin of the child; and this is the moſt favourable poſition in which it can be placed. Then graſping the handle of the inſtrument firmly in the right hand, wait for the acceſſion of a pain, during the continuance of which, raiſe the handle of the inſtrument gently towards the *pubes*, at the ſame time exerting a ſmall degree of extracting force. When the pain ceaſes let the inſtrument reſt, and when it returns repeat the ſame kind of action; and every time of acting endeavour to leſſen the preſſure on the ſoft parts of the mother, with the two fingers of the left hand placed in ſuch a manner as to form, in ſome ſort, a cuſhion on which the inſtrument may play. By a repetition of this action during the continuance of the pains, the head of the child will

ſoon be perceived to deſcend, and the face to turn gradually towards the hollow of the *ſacrum*. But ſhould the very moderate force we have recommended be found inſufficient to bring down the head of the child, that muſt be gradually and cautiouſly increaſed, till it is ſufficient to anſwer the purpoſe; and this may be done conſiſtently with the ſafety both of the mother and child. When the *vertex* begins to fill and protrude the external parts, it is probable there may be no farther occaſion to act with the inſtrument; or, if further action be required, it muſt be extremely gentle, taking all poſſible care, by turning the handle towards the *pubes*, by ſupporting the *perinæum*, and by ſlow proceeding, to guard againſt a laceration of the parts.

During the operation, the *vectis* being confined to that part of the head where it was originally placed, muſt, as the head deſcends, neceſſarily change its relative ſituation to the mother, and be gradually turned from the *pubes* to the ſide of the *pelvis*, as was before remarked of the handles of the *forceps*.

It is alſo to be obſerved, though from the name of the *vectis* it might be ſuppoſed we had the power of acting with it as a *lever* only,

that it will be found to poſſeſs a conſiderable degree of extracting force even when the curvature is but ſmall; and that we are able, at the time of uſing it, to direct with convenience, and in various ways, the head of the child as it deſcends.

In uſing the *vectis* ſome have directed us to apply it towards the hollow of the *ſacrum*; but I have perſuaded myſelf that the opinion which could lead to this practice was erroneous, that the inſtrument would then be worked with leſs efficacy, and there would be a greater hazard of doing miſchief to the mother and child.

It may laſtly be obſerved, that ſome gentlemen have, by frequent practice, acquired ſuch wonderful dexterity in the uſe of the *vectis*, as to finiſh the operation of extracting the head of a child with one ſingle ſtroke of the inſtrument. But as I only pretend to deſcribe a method of uſing the inſtrument with ſafety and efficacy, I may be excuſed from commenting upon all that has been affectedly or oſtentatiouſly advanced upon this ſubject.

## CHAP. IX.

### SECT. I.

### ON LESSENING THE HEAD OF THE CHILD.

HAVING finiſhed all the obſervations we had to make on the uſe of thoſe inſtruments which have been contrived to anſwer the firſt intention in practice, that of preſerving the lives of both the mother and child, we come to conſider an operation yet more important, though the neceſſity of performing it far leſs frequently occurs. In this operation, being convinced that under certain circumſtances it is impoſſible that both their lives ſhall be preſerved, we feel ourſelves juſtified in acting as if the child were already dead, as the only meaſure by which the life of the mother can be preſerved.

This operation has ever been eſteemed of the utmoſt conſequence with regard to its principle and practice. The right or equity

of taking away one life for the preſervation of another being doubted, the queſtion was referred to divines, as the moſt competent judges of the caſe; and by them it was decided to be unlawful to take away one life, on any account, for the preſervation of another. The reference of the queſtion may perhaps be conſidered as a proof that this operation had been performed too frequently, and the deciſion ſeemed actually to forbid it altogether; but, as far as the general determination could be ſuppoſed to relate to this operation, there was ſophiſtry in the ſtatement of the queſtion, if not in the reply. For by the firſt it was preſumed that the child was always living when this operation was to be performed, though that could ſeldom be the caſe; and by the latter it was allowed, that the authority of the deciſion might be ſuſpended, if there was reaſon to believe that the child was already dead. It was for this cauſe that all the ſymptoms of a dead child, certain and equivocal, were collected and diſtinguiſhed by authors with great aſſiduity and circumſpection.

In caſes of dangerous parturition the prerogative of deciding upon the life or death of the mother or child, was ſuppoſed by ſome to

be

be inherent in the huſband. This opinion is contrary to the rights and intereſts of ſociety, and never could have ſatisfied the mind, or juſtified the conduct of any perſon who ſhould have ſubmitted to be governed by it; nor do theſe caſes admit of ſuch election, for if the huſband had preferred the child, his wiſh of preſerving it at the expenſe of the life of the mother, could not have been gratified; he at leaſt could be no competent judge of the neceſſity of the caſe, and could claim no peculiar dominion over the lives of either of them.

True religion and the common ſenſe of mankind appear to have nothing contradictory. The doctrine they teach of its being our duty to do all the good in our power, and to avoid all the miſchief we can, is applicable to the exigencies of every ſtate, and we may be eaſily reconciled to it on the preſent occaſion. In ſome caſes of difficult parturition it is not poſſible that the lives both of the mother and child ſhould be preſerved. Of the life or death of the mother we can, under all circumſtances, be aſſured; of the life or death of the child there is often reaſon to doubt when we are called upon to decide

and to act. The deſtruction of the mother would not, in the generality of caſes, which may bring the operation of which we are ſpeaking under contemplation, contribute to the preſervation of the child; but the treatment of the child as if it were already dead, with as much certainty of ſucceſs as is found in other operations, ſecures the life of the parent. It then becomes our duty, and is agreeable to our reaſon, to purſue that conduct which will give us the moſt probable chance of doing good; that is, of ſaving one life when two lives cannot poſſibly be preſerved.

I forbear to inquire into the comparative value of the lives of an adult and a child unborn, becauſe that does not ſeem to me to be the preſent queſtion; and the ſubject has been in that view well conſidered*. But there is another argument to be drawn from the circumſtances which ſometimes occur in caſes of laborious parturition, which applies with greater force towards juſtifying this operation in preference to any other, which might prove more hazardous to the mother, than

* See Dr. Oſborn's Eſſay on Laborious Parturition.

any

any abſtract reaſoning. In all difficult labours, properly ſo called, eſpecially ſuch as are occaſioned by diſproportion between the head of the child and a ſmall or diſtorted *pelvis*, one of the firſt effects of long-continued and ſtrong pains, is the death of the child. The head of a dead child collapſing and admitting of preſſure into a form more ſuitable to the dimenſions of the *pelvis*, than a living one, will frequently be expelled through a ſpace too ſmall to allow that of a living child to paſs. But after this change, which follows the death of the child, ſhould the head remain too large, putrefaction advancing, the integuments of the head begin to decay, and the bones to looſen from each other. By the continuance of the action of the *uterus* upon the child the integuments of the head at length burſt, and the bones being ſeparated, the brain of the child may be evacuated through the opening. The bulk of the head thus leſſened may be excluded by the force of the pains, and the body, impaired by an equal degree of putrefaction, may readily follow, and the labour terminate without the aſſiſtance of art. All theſe changes may be, and ſometimes have been gone through with perfect ſafety to

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the mother; ſo that the artificial opening of the head of a child is, in fact, no more than an imitation in one caſe of what happens ſpontaneouſly in another, and ſuch imitation is the true ground on which the whole practice of ſurgery has been founded. It may alſo be obſerved that the reſources of nature, in every thing which relates to parturition, are infinite and conſtantly exerted for the preſervation of both the parent and child; yet when the two objects are incompatible, the life of the child is almoſt uniformly yielded to that of the parent.

From the number of ſigns of a dead child given by authors, and by the context of their writings, it appears to have been the practice, whenever the death of a child was aſcertained, to uſe the means of extracting it; or to have given medicines to excite and aid the conſtitution for expelling it, without any reaſon drawn from the preſent ſtate of the mother, but to prevent remote danger. This practice correſponded with the theory of the ancients, that a living child was born by its own efforts, but a dead child, being deſtitute of all power, muſt be excluded by art. But no fact is more clearly proved than that of a

dead

dead child remaining in the *uterus*, inoffenſively, for ſeveral weeks before the acceſſion of labour, and being then expelled in a manner perfectly natural. No injurious abſorption takes place, nor does the *uterus* ſuffer by being in contact with it. The certainty of the death of the child would not therefore indicate the neceſſity of the operation we are conſidering; but the reaſons for, and juſtification of, it muſt be deduced from the ſtate of the mother; and that ſtate muſt be ſuch as to prove her abſolute inability to expel the child, and the impoſſibility of extracting it by any of thoſe means which have been contrived for the purpoſe of delivering women, giving at the ſame time a chance of preſerving the lives of children; together with the danger of delay. But as the ſigns of a dead child, if deciſive, would, on many occaſions, have their influence on practice, and might at leaſt induce the moſt cautious and prudent man to haſten the time of performing this operation, which he might otherwiſe defer; and as the knowledge of theſe ſigns will lead to a more full inveſtigation of the ſubject, it is proper to enumerate them; and to inquire at the ſame time how far each of them may be allowed

allowed to determine the fact which they are adduced to prove.

## SECTION II.

### ON THE SIGNS OF A DEAD CHILD.

#### I. RECESSION OF THE MILK, AND FLACCIDITY OF THE BREASTS.

SHOULD the child die when a woman is far advanced in her pregnancy, and before the commencement of labour, these signs are seldom wanting. But if they were to be offered as proofs of the death of a child destroyed by the severity of a labour, it would have been needful to have compared the state of the breasts at two specific times; first, on the accession of labour, when the child was living and they might be turgid; and, secondly, in the advanced state of labour when the child was dead, and they might have become flaccid. But as it is not customary to inquire into the state of the breasts before some suspicion is entertained of the death of the child, and as those of no two women, under any cir-

cumſtances, exactly reſemble each other, all indications taken from the ſtate of the breaſts muſt be uncertain, and any judgment, founded upon ſuch indications, extremely liable to error.

## 2. COLDNESS OF THE ABDOMEN.

When children die towards the concluſion of pregnancy, women not unfrequently complain of coldneſs of the *abdomen*, and, at the inſtant of its death, there is uſually one violent ſhivering. But when women in labour ſpeak of this coldneſs, there is not actually external coldneſs, but a ſenſe of it felt by the patient. A ſuppoſition that a dead child is colder than a living one, is the principle which gives to this ſign its chief importance. But whether a child has been dead for a ſhort or a long time, it is generally found to be of the ſame degree of heat with the *uterus* in which it was contained, and it is even hotter than the *uterus* while it is in the act of putrefying. The principle being fallacious, the inferences muſt often miſlead, and a child is often born living, though the mother, before her delivery, complained of this coldneſs; which

which may be produced by ſome contingent circumſtance, as the great heat of the room when ſhe is in a profuſe perſpiration, or the ſudden admiſſion of cold air under the bed-clothes in winter. Little ſtreſs is to be placed on this ſign alone, but, when accompanied with others, it may increaſe our ſuſpicions of the ſtate of the child.

### 3. MECHANICAL WEIGHT OF THE UTERUS.

If a woman in labour, or in the latter end of pregnancy, ſhould feel the *uterus* fall with a ſenſe of increaſed or unreſiſted weight, when ſhe turns from one ſide to the other or changes her poſition, it is often ſurmiſed that the child is dead; all that reſilition obſerved to exiſt in every living body being loſt. But this ſenſe or effect may be explained in a more ſatisfactory manner from other cauſes, eſpecially when a woman is in labour. Should the waters of the *ovum* be ſuddenly diſcharged, the *uterus* will contract till it comes into contact with the body of the child. But the integuments of the *abdomen*, not contracting with equal celerity, and the *uterus* wanting that ſupport which they afforded when

it

it was fully diſtended, muſt of courſe fall to whichever ſide the woman may turn. Should the waters be diſcharged ſlowly, or ſhould the head of the child drop into the *pelvis* immediately after their diſcharge, there would not be this ſenſe of unſupported weight whether the child were living or dead; becauſe in one caſe the *uterus* would be held firm by the general contraction, and in the other, the child would be prevented from that kind of motion by its poſition.

When a child dies in the latter part of pregnancy the flaccidity and ſubſidence of the *abdomen* are conſiderable; but it is from a very great degree of theſe one is led to ſuſpect either the death or waſting of the child, ſuch ſubſidence being one of the natural changes which precede labours.

### 4. WANT OF MOTION OF THE CHILD.

The kind and degree of motion which may be cauſed by the child varies in different women, and at different periods of pregnancy. By ſome the child is ſcarcely ever perceived, and with others it is ſcarcely ever at reſt, but it is often quiet a few days before, and

and in the time of labour. By the motion of the child its living ſtate is aſcertained; but the want of motion does not prove that it is dead, nor would it, for that reaſon, be juſtifiable to perform any operation which might be injurious to it, if living.

Some pregnant women have never been able to perceive the motion of the child through the whole time of pregnancy. Others have thought that they have felt the motion of the child, though the event has proved that they were not pregnant. Others have not doubted of the life of the child, though, after its birth, there were certain marks of its having been long dead. In long and very ſevere labours natural affection may be overcome by preſent ſuffering and diſtreſs, and women might conceal their knowledge of the motion of the child from the hope of a more ſpeedy delivery. Every allowance muſt be made and every conſideration had for human nature, humbled by infirmities and miſery. The fears and affection of friends will alſo warp their judgment; but our greateſt tenderneſs and the propriety of our conduct will be ſhewn, not by a compliance with requeſts and ſolicitations,

tions, but by following the dictates of our own reaſon and judgment, for we are not to be governed or alarmed with apprehenſions of danger, but with its actual exiſtence.

### 5. FOETOR IN THE APARTMENT OF THE PATIENT.

The putrefaction of the child would be an indubitable mark of its death, and might create a very offenſive ſmell in the apartment in which the patient was confined; but every putrid child does not yield an offenſive ſmell, and ſuch ſmell may be occaſioned by ſeveral other circumſtances. If a child ſhould die in the *uterus* from external injury, or any internal cauſe, and become putrid before the membranes of the *ovum* were broken, it would have a peculiarity of ſmell, but not that *fœtor* which every animal ſubſtance emits, while it is in the act of putrefying under the influence of the open air. The *fœtor* to which we now allude, can only appertain to a child which was living in the beginning of labour, and died in the courſe of it, after the diſcharge of the waters; and in ſuch caſes, when putrefaction does begin, it is commonly

very rapid in its progreſs. The general ſmell of putridity in the apartment of a perſon in labour, is to be admitted with very great caution as a ſign of a dead child; for if the room be ſmall, or crowded with company, or kept hot and uncleanly, or the common offices of life are performed in it, as is uſually the caſe among people of the lower claſs, a ſimilar effect will be produced as when the child is dead and become putrid.

### 6. FOETOR AND ILL APPEARANCE OF THE DISCHARGES.

The *fœtor* here meant is alſo ſuppoſed to ariſe from the putrefaction of the child, and the ill appearance to proceed from a mixture of *meconium*, ſanious, or other matter which might be ſuppoſed to flow from a putrefying child, with the common uterine diſcharges. But the appearance of thoſe diſcharges naturally varies in different women, according to their conſtitution, and to the qualities of the waters of the *ovum*. They become altered likewiſe by contingent circumſtances as the caſual retention of the diſcharge, or ſlight inflammation of the parts, which in

ſome caſes gives a ſtrong ſcent to them, hardly to be diſtinguiſhed from putrid *fœtor*. With every appearance of the uterine diſcharges, children have been born living and healthy; and when they have been long dead, thoſe have in many inſtances been ſo little changed, as not to raiſe ſuſpicion in the minds of very experienced men; ſo that it appears that the propoſal of any operation which would be injurious to the child, if living, would not be juſtifiable, merely on account of the ſmell or appearance of the diſcharges.

### 7. EVACUATION OF THE MECONIUM, WHEN THE HEAD OF THE CHILD PRESENTS.

Should a child preſent with the breech or inferior extremities, the evacuation of the *meconium*, which is an abſurd name given to the excrements of the child at the time of its birth, is one of the proofs of ſuch preſentation. But when the head preſents, if the labour be very ſevere or tedious, the waters will be tinged of a greeniſh colour, or pure *meconium* may be forced away, and, with ſuch appearances, the child is often ſuppoſed to be

dead; from a preſumption, that if it was living, the *ſphincter* of the *anus* would act with power ſufficient to prevent any diſcharge. But by experience it is fully and frequently proved that a child may be born living, though the *meconium* ſhould come away when the head preſents, its evacuation proving no more than the weakneſs of the child, or the degree of compreſſion it has undergone. The diſcharge of the *meconium* may alſo depend upon the quantity contained in the bowels, or ſome caſual preſſure upon the *abdomen*. We may however, in general, conclude, when the *meconium* comes away in a natural preſentation, that the ſtate of the child is not void of danger; and for many years I never ſaw a child born living, when the *meconium* had come away more than ſeven hours before its birth. But at length, I met with a caſe, in which the *meconium* was diſcharged for more than thirty hours, at the end of which time, though the woman was delivered with the *forceps*, the child was born healthy and ſtrong.

## 8. EMPHYSEMATOSE, EDEMATOSE, OR OTHER PECULIAR FEEL OF THE HEAD OF THE CHILD.

In many caſes in ſurgery, information may be gained and the judgment aſſiſted by what is called the *tactus eruditus*, or that faculty which enables us to perceive and diſcriminate by the touch, with greater accuracy than by any evident marks. It has alſo been ſaid that we may decide in many doubtful caſes, by the feel of the head, whether a child be living or dead. But as we know that in ſurgery, the moſt expert in this faculty are often miſtaken, when they deſert common evidences, ſo opinions, formed on ſuch ground, would not authorize an operation to which they might be ſuppoſed to lead, in the queſtion on which we are now ſpeaking. For the integuments of the head of a child often become edematoſe to a conſiderable degree, from preſſure in its paſſage through the *pelvis*; and emphyſematoſe from a continuance or increaſe of the ſame preſſure, when the child may, in all other reſpects, be perfectly well. If the integuments are ſqueezed

into a ſmooth, round form, that is ſaid to be unfavourable; but when they are corrugated, the tumefaction, though equally great, is thought to be of leſs conſequence; the former being ſuppoſed to prove the abſolute detachment of them from the *cranium*. The original connexion of the bones of the head is ſuch, as to allow of their being preſſed cloſe to, or over, each other with ſafety to the child; yet when this has been long dead, and their natural connexion deſtroyed, they may be perceived to be looſe and diſtinct. The ſtate of the bones is frequently ſuch as to leave no doubt of the death of the child, as well as the abraſion of the cuticle or the falling off of the hair; but proofs of things ſelf-evident are not wanted in practice, but ſuch as will guide us in doubtful caſes. Probably I have before obſerved, that whenever children die in the *uterus*, the greater the degree of putrefaction in which they are expelled, the more favourable is the indication to the mother; ſhewing, I ſuppoſe, that the health and vigour of her conſtitution in general, and of the *uterus* in particular, are not impaired. But if a child ſhould remain dead in the *uterus*, for any length of time, without becoming putrid, this

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circumſtance might be conſidered as a proof that the powers of action in the mother were reduced to a ſtate of dangerous weakneſs, as food remaining unchanged in the ſtomach would be a proof of the debility of that part.

Many ſigns of a dead child have been mentioned by authors, under the denomination of equivocal, as the livid paleneſs of the countenance of the mother, the offenſive ſmell of her breath, and ſeveral others. But if it appears that thoſe ſigns which have been called certain are in fact doubtful, it will follow, that very little reliance ought to be placed in thoſe which are acknowledged to be equivocal. If, however, the propriety of performing this operation ought not to be decided by the certain knowledge of the death of the child, but by the circumſtances of the mother abſolutely requiring it for her preſervation; then, the conſideration of the life or death of the child becomes of leſs importance. Becauſe if the operation, when really neceſſary, were not to be performed, the life of the child would not be ſaved, and that of the parent would be inevitably loſt.

## SECTION III.

### ON THE CAUSES OF THE DEATH OF THE CHILD.

THE death of a child in the *uterus* may be occaſioned by various cauſes independent of the mother, as by local inflammation or other diſeaſe of ſome part eſſentially neceſſary to its life; by ſome original imperfection in its ſtructure which may prevent its acquiring more than a certain ſize, or exiſting beyond a certain time; by the ſmallneſs or morbid ſtate of the *placenta*, hindering the proper communication between the child and the *uterus*; by a partial or total ſeparation of the *placenta*; or, by the rupture of ſome of the large veſſels which run upon its ſurface: by the veſſels of the *funis umbilicalis* becoming impervious; by the circulation through them being obſtructed by the caſual tying of a knot; by untoward preſſure of the body of the child upon the *funis*; or by

by its becoming dropſical or otherwiſe diſeaſed.

The child may alſo be deſtroyed by affections or diſeaſes of the mother, as by the ſudden and violent impreſſion of fear, joy, or other tumultuous paſſion; by the irregularity of the parent's life; by fever; by improper or unwholeſome diet; by any cauſe capable of depriving the child of a proper quantity of nutriment, or depraving the quality of that with which it may be ſupplied; or by accidents which produce ſome poſitive injury upon the body of the child, through the integuments and parts with which it is inveſted and naturally defended. Some of theſe are beyond the power of art to prevent or remedy, though others might by proper care and management be obviated or relieved; but at preſent we want only to diſcover thoſe cauſes, of the death of a child, which may occur in the time of labour.

To the inconveniencies and danger which may ariſe in the courſe of a labour from the diſproportion between the ſize of the head of a child and the dimenſions of the *pelvis*, we muſt ſubmit; as no judgment or ſkill can do

more

more than teach us to wait patiently for the effect to be derived from the efforts of the mother, and the accommodating conſtruction of the head of the child. And, though the degree of compreſſion which this may undergo in a very tedious or difficult labour might be judged inconſiſtent with the ſafety of children, they will often be born healthy and vigorous, and the parents recover more ſpeedily and perfectly, after ſuch labours, than after thoſe which were natural and eaſy. The ſame obſervation will alſo hold good of the reſiſtance made by the ſoft parts to the paſſage of the child through the *pelvis*, unleſs their rigidity ſhould proceed from local inflammation. But ſhould the natural efforts be interrupted or ſubdued by fever, debility, or any other adventitious cauſe, or ſhould there be local diſeaſe, the ſtate of the patient would require the aſſiſtance of medicine or of art, according to the circumſtances which might ſupervene. Yet it cannot have eſcaped obſervation, that far the greater number of thoſe labours which have been conſidered as difficult, and which really were ſuch towards the concluſion, were not in fact occaſioned by

by the abſolute ſtate of the patient, but by interpoſition, and the deſire of accelerating labours, which in their nature required a certain time for their completion. This interpoſition has chiefly conſiſted of two points of practice, both extremely reprehenſible; the artificial dilatation of the *os uteri*, and the premature rupture of the membranes. By ſuch practice the order of the labour becomes diſarranged, and there often follow occaſions to exerciſe art, for the relief of thoſe evils which were originally cauſed by the improper uſe of art, to the great hazard of the parent or child. So long therefore as labours proceed naturally, they may be proper objects of our reaſon and judgment, but cannot be conſidered as the objects of art. But when they are proved to be beyond the efforts of nature to accompliſh, the aſſiſtance of art becomes juſtifiable becauſe it is neceſſary, and we may be reconciled to the fate of the child, if the life of the mother cannot poſſibly be preſerved by any means conſiſtent with its ſafety.

## SECTION IV.

### ON THE INSTRUMENTS USED IN THIS OPERATION.

THE inſtruments with which this operation was antiently performed, do not appear to have been well calculated to anſwer the intention of the operator, effectually or ſafely. They conſiſted chiefly of hooks, differing in form and length, which were fixed upon any part of the head with the view of extracting it forcibly. It being ſometimes found impracticable to fix a hook upon the head, other inſtruments were invented and uſed to make an opening in which a hook might be fixed, but without any intention of leſſening the head. All theſe inſtruments it would be uſeleſs and tireſome even to enumerate; but it is remarkable that *Mauriceau*, a man of great experience and ability in his profeſſion, ſhould complain of difficulties in this operation which he could not ſurmount, from the want of proper inſtruments.

Perhaps

Perhaps there is no operation in ſurgery which admits of a more preciſe diſtinction, than this of leſſening the head. It conſiſts of three parts; perforating the cranium; evacuating the brain and *cerebellum*; extracting the head; and three inſtruments were commonly uſed for theſe purpoſes. The firſt was the ſciſſars uſed by *La Motte*, altered and improved by *Smellie*; the ſecond was in the form of a large ſpoon with ſerrated edges; the third was a hook or crotchet, ſtraight or curved, to be uſed ſingly, or in pairs like the *forceps*.

Many years ago, *Savigny* the inſtrument maker, at my requeſt, prepared two inſtruments which I ſuppoſed to be fully ſufficient for this operation, the evacuation of the brain not requiring a ſeparate inſtrument. The firſt was a *perforator* in the form of *Smellie*'s ſciſſars, the blade being ſlightly curved in the manner of the ſciſſars uſed for extirpating the tonſils, but without any cutting edge, which is ſomewhat dangerous and altogether uſeleſs; the ſecond was a crotchet with a little degree of curvature and a very ſmall hook. The *perforator* meaſures about nine inches in length, and has a ſtop on each blade one inch

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and a quarter from the point. The crotchet, which has a wooden handle and a flat ſtem, ſhould, when properly curved, be of an equal length with the *perforator*. Theſe inſtruments, which are now almoſt in general uſe, are found to be very convenient and fully adequate to every purpoſe in the performance of this operation; and as the intention is well underſtood, and the inſtruments ſimplified, both the difficulty and danger of the operation are infinitely leſſened.

Since theſe papers were ſent to the preſs, an account of the invention and uſe of the *vectis*, by Dr. *Bland*, has been publiſhed in the *Medical* Communications. It is, perhaps, unneceſſary for me to obſerve, that I have not yet read that account; ſo that whatever difference may be found in the two accounts may be aſcribed to the opinions which, from experience, we have conſidered ourſelves authorized to adopt.

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AN

# ESSAY

ON

# *DIFFICULT LABOURS.*

PART THIRD, AND LAST,

## ON PUERPERAL CONVULSIONS,

AND

## ON THE DESCENT OF THE FUNIS.

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# *DIFFICULT LABOURS.*

## PART THIRD.

### SECTION V.

### ON THE MANNER OF PERFORMING THE OPERATION.

MUCH conſideration is required before we determine to perform this operation; but when we have decided upon the neceſſity of its being done, together with circumſpection in the manner of doing it, there is occaſion for our being reſolute and perſevering in our attempts to accompliſh it; even when the difficulties to be ſurmounted appear to be too great for any degree of ſkill, or any force we have the power of uſing. One common error formerly prevailed in this and many other operations, founded on an

opinion, that it was needful to perform it ſpeedily; but it is now proved by experience, and generally acknowledged, that the more calmly and ſlowly we proceed, the leſs chance there will be of failing, or doing miſchief. As the ſole aim of this operation is to preſerve the life of the mother, without regard to the child, whatever its ſtate might be, it will be our duty to be extremely careful to guard againſt every accident which might prove injurious or hazardous to the mother. But, as by following the diſtinctions ſpecified in the laſt ſection we ſhall be able to mark and explain all the circumſtances of the operation as they occur, we will abide by thoſe diſtinctions in deſcribing the manner of performing it.

## SECTION VI.

### ON THE PERFORATION OF THE HEAD.

The eaſe or difficulty attending this and every other part of the operation, will depend upon the diſtance the head may be from us; whether,

whether, for inſtance, it be deſcended and locked in the *pelvis*, or be lying at the ſuperior aperture; and upon the degree of diſtortion of the *pelvis*, which may be only ſo much as juſt to prevent the paſſage of the head, or ſo great as to render the uſe of the inſtruments both troubleſome and dangerous. Some inconvenience may alſo be produced by the *os uteri*, ſhould not this be dilated; but this may rather be eſteemed a reaſon for extraordinary care than as a cauſe of difficulty.

Without regard to the part of the head we mean to perforate, but deciding upon that which is moſt obvious and eaſy of acceſs, as the moſt proper, the left hand flattened is to be introduced into the *vagina*, and the fore finger of the ſame hand is to be directed upon that part of the head where we mean to fix the point of the inſtrument. The *perforator*, held in the right hand, is to be conducted with the convex part towards the palm of the left hand, and with the point kept cloſe to the fore finger, till it reaches the part we mean to perforate. The fore finger of the left hand is then to be paſſed round the point of the inſtrument, that we

may be assured none of the soft parts of the mother are in the way of being hurt. With the instrument held firmly in the right hand, we must then press through the integuments of the head; and, the point being fixed upon the bones of the *cranium*, begin to perforate, by turning with a semirotatory motion the handle of the instrument. This motion of the instrument, taking care to confine the point to the place where it was originally fixed, is to be continued till we judge the bone to be actually perforated; trying occasionally, by advancing the instrument, whether the bone be perforated. When the bone is perforated, the instrument being pressed forwards will penetrate the head, and go on till it reaches the stops formed upon the blades. Then, fixing the finger and thumb of the right hand in the bows of the handle, or pressing the thick part of the hand between the stems, or calling for the help of an assistant, let the handles of the instrument be separated to such a distance as to make a slit or opening of sufficient length in the *cranium*; judging of, and in some measure guiding, the effect produced upon the blades by the separation of the handles, by the finger of the

the left hand retained in its primitive poſition. Then, cloſing the handles, the inſtrument muſt be turned in a tranſverſe direction, and they are again to be ſeparated in the ſame cautious manner, by which means a crucial opening of a proper ſize will be made in the *cranium*. The *perforator* is then to be cloſed and withdrawn in the manner it was introduced.

In this part of the operation the principal things which demand our attention are, firſt, that the inſtrument be carefully introduced; ſecond, that we be not alarmed at the diſcharge which follows the perforation of the integuments of the head, as that is to be expected; third, that the point of the inſtrument does not ſlip while we are perforating; fourth, that the opening in the *cranium* be ſufficiently large.

## SECTION VII.

### ON THE EVACUATION OF THE CONTENTS OF THE HEAD.

A VERY large opening of the *cranium* has been generally reputed neceſſary for the well performance of this operation; but this is not abſolutely required in any point of view, nor can it always be made with ſafety. It muſt, however, be ſufficient for the purpoſe of ſuffering the contents of the head to paſs through it; and for the evacuation of theſe, it was before mentioned, that various inſtruments had been contrived. But theſe, eſpecially the ſerrated ſpoon, appear to be unneceſſary and dangerous; unneceſſary, becauſe the texture of the brain and *cerebellum* being broken down, their evacuation will follow of courſe, as the head is propelled or extracted; dangerous, becauſe an inſtrument with many ſharp points could not be frequently introduced and withdrawn, without the hazard of being catched on the ſoft parts of the mother. Any ſmooth inſtrument of a proper ſize and length, ſuch as the handle of

a ſilver

a ſilver ſpoon, or a blade of the *forceps*, will anſwer the purpoſe of breaking down and evacuating the contents of the head ſafely and effectually. But I have generally introduced the crotchet into the opening in the *cranium*; and, turning it round frequently, in various directions, eſpecially near the baſis of the ſcull, have completed this part of the operation without difficulty. With all the care which can be taken, it is not always poſſible to do this on the firſt trial; but, if in the courſe of the operation it ſhould be found that any part of the contents of the head had eſcaped the action of the inſtrument, the ſame method may at any time be repeated, without delaying the operation.

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## SECTION VIII.

### ON THE EXTRACTION OF THE HEAD.

It was formerly a rule of practice, whenever the head of the child was opened, that the efforts to extract it ſhould immediately

commence, and be continued till the purpoſe was accompliſhed. With all the cautions which have been given for aſcertaining the neceſſity of the operation before it was performed, it was ſtrongly inculcated, that we ſhould be on our guard not to defer it till the ſtrength of the patient was too much exhauſted; becauſe by ſuch delay we ſhould altogether loſe the advantage that might reſult from the natural efforts; and, when the child was extracted, the mother would remain in a ſtate of the greateſt danger from mere debility. Our conduct with regard to the extraction of the head muſt then depend upon the ſtate of the patient; whether that ſtate will permit us to wait for the advantages to be derived from the putrefaction and compreſſion of the head, or whether the head ſhould be ſpeedily extracted by art. If, from the great diſtortion of the *pelvis*, it ſhould have been found neceſſary to leſſen the head in the beginning, or early part of labour, the head when leſſened may be left for many hours, to undergo thoſe changes which putrefaction occaſions, to the diminution of its bulk by compreſſion, to its gradual deſcent into the *pelvis*, when it

may

may be readily extracted, or to the chance of its final expulsion without assistance, as the reason and nature of the case may indicate or require. Under such circumstances the late Dr. *Christopher Kelly** informed me, and I believe the practice originated with him, that he had left the head of a child, after the evacuation of its contents, for more

* The papers of my late worthy friend Dr. *Kelly* are in the hands of my son-in-law Mr. *Croft*, who found among them the following account of the individual case, probably, of which the Doctor had informed me.

" March 11, 1763. —— has a *pelvis* extremely narrow, and, by the measure I took, do firmly believe the distance between the *os pubis* and projection of the *sacrum* is not more than two inches, therefore I knew it was in vain to hope to bring the child alive by any means whatever: therefore, for her safety, I opened the head freely, and emptied the *cranium*, in about sixteen hours after being first called to her, and then left it to settle into the *pelvis* twenty-four hours (as in the case of Mr. *Ford*'s patient), before I delivered her, which I did with tolerable ease, by means of the blunt hook only. She recovered as well as possible. This was her first child. She was so ricketty when a child as not to be able to walk till nine years of age, and is now very short. Her name is ——."

The *pelvis* of this woman came at length into my hands, and in some parts of the superior aperture does not measure more than one inch and a quarter. D.

than

than twenty-four hours, without making any artificial attempts to extract it; and that the operation was, by this delay, rendered more ſafe, and infinitely more eaſy. The late Dr. *Mackenzie* alſo informed me, that he had in the latter part of his life followed this practice with ſucceſs. But the matter has been more fully diſcuſſed, with great ingenuity, and as much preciſion as the queſtion admits, by Dr. *Oſborn**, who, in a caſe of which I was a witneſs, left the head of a child more than thirty-ſix hours after it had been leſſened, and then extracted it; the woman recovering without any untoward ſymptom. When the head of the child has been leſſened, the length of time during which the patient may therefore be truſted in expectation of favourable changes, muſt be left to the judgment that may be formed of every individual caſe which may be the object of practice. In ſome caſes, from the precarious ſtate of the mother, there will exiſt a neceſſity of extracting the head as ſpeedily as we can with ſafety; yet the general principle to be eſtabliſhed is, that the

* *Eſſay on Laborious Parturition.*

longer

longer we do wait the more eaſily will the head be extracted. But the patient is to be carefully watched that we do not wait too long, leſt unfavourable ſymptoms ſhould come on, and the end for which the operation was performed be defeated.

Sooner or later then, according to the ſtate of the mother, it will be neceſſary that we ſhould begin to make our efforts to extract the head of the child; and taking care, in the firſt place, to remove cautiouſly any looſened or ſharp pieces of bone, I have been accuſtomed to avoid uſing the crotchet, or any kind of inſtrument, till I have tried what advantage was to be gained with my fingers. With this view, introducing the fore finger of my right hand, armed with my glove, or ſome ſuch contrivance, into the opening in the head, and then bending it in the ſhape of a hook, I have pulled it with all the force it enabled me to exert, repeating my attempts at intervals when the natural efforts of the mother returned.

Should the head of the child be ſo high in, or above, the ſuperior aperture of the *pelvis*, or this be ſo much diſtorted as not to admit of my giving this kind of aſſiſtance,

or

or ſhould it be unequal to the purpoſe, I carefully introduce the crotchet, guided by my left hand into the opening in the head; and, fixing the point of the hook as far from the edge of the bone as it will allow, I begin to pull moderately by the handle held in my right hand, guarding at the ſame time the hook of the crotchet with the fingers of the left, if it ſhould happen to tear away the bone.

If on trial the crotchet be found firmly fixed, but the head be too much impacted in the *pelvis* to be brought down with the force firſt uſed; that is, ſuppoſing the force required to extract the head be equal to 10, and the force exerted by the crotchet not to exceed 5; no other purpoſe can be anſwered by ſtriving too earneſtly with the force which cannot be made to exceed 5, except tearing away the piece of bone in which the crotchet may be fixed, which does not facilitate the operation. We are to be ſatisfied with the ſteady exertion of the force 5, which, being continued, will at length be found ſufficient to our purpoſe, the reſiſtance gradually diminiſhing, and the force 5 remaining. In the repetition of

our

our attempts to extract the head, which muſt be made at intervals, ſhould the bone in which the inſtrument was fixed be looſened and come away, wholly or in part, the crotchet muſt be again introduced and fixed in another place, and the ſame method of proceeding followed; remembering alſo when we extract, to pull with ſome variation in the direction, but always in the line of the cavity of the *pelvis*. In almoſt every caſe of difficulty the obſtacle or cauſe of the difficulty is at one particular part of the *pelvis*, and when the head has paſſed that part there is no farther occaſion for uſing force. We are afterwards to proceed very circumſpectly, that there may be no laceration of, or injury done to, the parts of the mother, internal or external. The principle I wiſh to impreſs on the minds of thoſe who may be embaraſſed with difficulties of this kind is, that time is equivalent to force, and that no advantage will be obtained by pulling away ſmall pieces of bone, except ſuch as were looſe and likely to injure the ſoft parts of the mother. On the contrary, when the inſtrument is once firmly fixed in a part of a bone which affords a good hold, I have been cautious not

to tear it away by pulling raſhly, conſidering that as ſomething like breaking the inſtrument with which I was performing the operation.

In a caſe of very great difficulty it is however poſſible that all the bones of the *cranium* might be brought away ſucceſſively, and nothing of the head remain but the baſis of the ſcull, with the integuments. It then has happened oddly enough, that I have ſucceeded in bringing down the remainder of the head, merely by graſping the integuments firmly in a maſs, or even in diſtinct parts, and pulling by them in a proper direction. But, if theſe ſhould be found inſufficient, the crotchet is to be introduced again, and fixed upon the baſis of the ſcull on any part where we can get a firm hold, and this aſſuming a more convenient direction will be readily brought down. I have not found, in caſes of this kind, that I have acted from a preference for fixing the inſtrument in this or that part, or in this or that manner; but, giving myſelf time to reflect, the exigence of the caſe has dictated what I ought to do, ſo that I am not ſolicitous about any particular method. Some have thought that it was of

great

great importance to fix the crotchet on the out ſide of the head, and others have inſiſted on the propriety and ſuperior advantage of fixing it on the inſide; but I am perſuaded that ſuch things are of little conſequence, and that in the courſe of a difficult operation it may be found neceſſary and uſeful to fix it in either way.

When the diſproportion between the cavity of the *pelvis* and the head of the child is very great, it is poſſible that all the bones of the *cranium*, together with the baſis of the ſcull, may be brought away, yet the body of the child may remain above the ſuperior aperture of the *pelvis*. This circumſtance may require different methods of treatment. If the ſpace between the projecting bones of the *pelvis* would allow the flattened hand to be paſſed into the *uterus*, it might be moſt expedient to turn the child and deliver by the feet, which, thus ſituated, I have more than once done. But, if the diſtortion of the *pelvis* will not allow the hand to paſs into the *uterus*, the crotchet muſt be again introduced, and fixed upon the cheſt of the child, where it may probably meet with ſome part that will bear a ſufficient degree of force for extracting

tracting it. Should this not be the caſe, the crotchet muſt be repeatedly tried, by which the contents of the *thorax* and *abdomen* may be evacuated, and the general bulk of the child's body very much leſſened. Then, trying to fix the hook of the inſtrument on ſome part of the ſpine, or bringing down the arms, we ſhall at length ſucceed and extract the body of the child, whole or in parts, though we may have been frequently baffled. In an operation difficult as that now deſcribed, diſagreeable as it may appear, and really is, having only occaſion to attend to the extraction of the child, in any manner, without doing miſchief to the mother, the mind of the operator may be at eaſe, and he will then avail himſelf of every advantage which ſhall offer towards anſwering his purpoſe. On the whole, I have never known a caſe attended with ſo much difficulty that it could not be ſurmounted by ſteady and ſlow proceeding; and, after all his difficulties, if he has acted cautiouſly, the operator may be repaid by ſeeing his patient recover, as well, or better, than after the moſt eaſy labour.

## SECTION IX.

### ON THE SUBSEQUENT TREATMENT.

When a child has been extracted in the manner before deſcribed the *placenta* will commonly be expelled in a natural way; but ſhould any difficulty ariſe, that muſt be managed according to the rules before given in the Eſſay on Hemorrhages.

Women in general recover well after this operation, provided it was not delayed till ſome irreparable injury was done to the parts of the mother, and was performed with care. Beſides the treatment which may be proper for all women in childbed, it will be incumbent upon us to be particularly careful in theſe caſes that the urine be voided; and, if the patient ſhould not be able to do it by her own efforts, that it be drawn off with the catheter, within a ſhort time after her delivery. The uſe of the catheter is alſo to be continued twice in the courſe of twenty-four hours, till ſhe may become able to expel the urine; leſt there ſhould be inflammation,

on any part of the bladder or *meatus urinarius*, and a ſlough be caſt off, which would be followed by an involuntary diſcharge of urine ever afterwards; which I conſider as one of the moſt deplorable accidents in the practice of midwifery.

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## SECTION X.

### ON THE PROPRIETY OF BRINGING ON PREMATURE LABOUR, AND THE ADVANTAGES TO BE DERIVED FROM IT.

We have before alluded to this operation as a method of preſerving the lives of children, without adding to the danger of women; if in any caſe the *pelvis* were ſo much diſtorted, or ſo ſmall, as abſolutely to prevent the paſſage of the head of a full grown child, and yet not ſo far reduced in its dimenſions as to prevent the head of a child of a much leſs ſize from paſſing through it. Melancholy are the reflections when a woman has a very much diſtorted *pelvis*, and ſuch women have uſually a wonderful aptitude to conceive,

conceive, that there ſhould be ſo little chance of preſerving the lives of her children; and yet, in the courſe of practice, I have in ſeveral inſtances been called to the ſame woman, in five or ſix ſucceſſive labours, merely to give a ſanction to an operation by which the children were to be deſtroyed. It is to the credit of the profeſſion that every method, by which the lives of parents and children might be preſerved, has been deviſed and tried; and, though frequent occaſions for uſing ſome of theſe methods cannot poſſibly occur in any one perſon's practice, it is right that all ſhould be acquainted with what has been propoſed and done in every caſe, with or without ſucceſs.

The firſt account of this method of bringing on premature labour was given to me by Dr. *C. Kelly*. He informed me, that about the year 1756 there was a conſultation of the moſt eminent men in *London* at that time, to conſider of the moral rectitude of, and advantages which might be expected from, the practice, which met with their general approbation. The firſt caſe in which it was deemed neceſſary and proper fell under the care of the late Dr. *Macaulay*, and

it terminated ſucceſsfully *. Dr. *Kelly* informed me that he himſelf had practiſed it, and, among other inſtances, mentioned that the operation had been performed three times upon the ſame woman, and twice the children had been born living. The thing has often been the ſubject of converſation, and propoſed by writers, but ſome have doubted the morality of the practice; and the circumſtances which may render the operation needful and proper have not been ſtated with any degree of preciſion.

With regard to the morality of the practice, the principle being commendable (that of making an attempt to preſerve the life of a child which muſt otherwiſe be loſt), and nothing being done in the operation which can be injurious to the mother, I apprehend, if there be a reaſonable proſpect of ſucceſs, no argument can be adduced againſt it which will not apply with equal force againſt inoculation, againſt medicine in general, and, in fact, againſt the interpoſition of human reaſon and faculties in all the affairs of life. Such an argument would lead us back

* The patient was the wife of a linen-draper in the *Strand*.

to

to the abſurd doctrine of predeſtination, if, with juſtifiable intentions, and without producing any preſent evil, we may not uſe our endeavours to extricate our fellow-creatures from evils which threaten them, or under which they may be actually oppreſſed.

If the morality be juſtified, we are next to conſider the ſafety and utility of the practice.

As to its ſafety, having reaſoned upon the ſtructure of the parts concerned in the operation, and having carefully attended to all the circumſtances which have occurred when it had been performed, in eight caſes, in which I have either performed it, or it has been done by my advice and perſuaſion, I have not known one untoward or hazardous accident that could be imputed to it. I therefore feel authorized to ſay, as far as my reaſon or experience enables me to judge, that the operation of bringing on premature labour is perfectly ſafe to the perſon on whom it may be performed.

But reſpecting the utility of the operation, the ſtatement firſt made of the intention or purpoſe with which it may be done; that is, to try whether the head of a ſmall child

will not paſs through a *pelvis* too much narrowed in its dimenſions to allow one of a common ſize to paſs; will ſhew that the objects of the operation are circumſcribed within certain limits. Should the cavity of the *pelvis* be of its natural ſize this operation is out of the queſtion, and never can be required. If the cavity of the *pelvis*, though reduced in its dimenſions, would permit the head of a child to be ſqueezed through it by the force of ſtrong and long continued pains, this operation is not required, and ought not to be performed. If the *pelvis* be ſo far reduced in its dimenſions as not to allow the head of a child of ſuch a ſize as to give hope of its living, to paſs through it, the operation cannot be attended with ſucceſs. It is in thoſe caſes only in which there is a reduction of the dimenſions of the *pelvis* to a certain degree, and not beyond that degree, that this operation ought to be propoſed or can ſucceed.

It would be highly ſatisfactory to ſtate with preciſion the exact dimenſions of the cavity of the *pelvis* of the perſon on whom it might be needful to perform this operation, and on whom it might be performed with

ſucceſs. But, as all the inſtruments contrived for meaſuring the *pelvis* in the living woman, too imperfectly anſwer this purpoſe to enable us by them to form a guide of practice, the determination muſt be left to opinion; and thoſe who are experienced will not commit any great miſtake in their conjectures. Under circumſtances and in ſituations juſt preventing the ſucceſsful uſe of the *vectis* or *forceps*, and juſt compelling us to the fatal meaſure of leſſening the head of the child, it may become a duty to propoſe, on a future occaſion, the bringing on premature labour; at ſeven months, or any later time, according to our ſenſe of the diſproportion between the head of a child and the cavity of any particular *pelvis*. It can hardly be doubted but that the caſual events of practice firſt inſpired the notion of this method in the mind of ſome perſon who, adverting to the fortunate termination of premature labours coming on ſpontaneouſly, in caſes of diſtortion of the *pelvis*, endeavoured to imitate by art what not unfrequently happens naturally.

There is another ſituation in which I have propoſed, and tried with ſucceſs, the method

of bringing on premature labour. Some women, who readily conceive, proceed regularly in their pregnancy till they approach the full period, when, without any apparently adequate cauſe, they are in the habit of being ſeized with a rigor, and the child inſtantly dies; though it may not be expelled for ſome weeks afterwards. In two caſes of this kind I have propoſed to bring on premature labour, when I was certain the child was living, and have ſucceeded in preſerving the children without hazard to the mothers. There is always ſomething of doubt in theſe caſes, whether the child might not have been preſerved without the operation; but, as ſuch caſes often come under conſideration, and as I am diſcloſing all that my experience has taught me, it ſeemed neceſſary to mention this circumſtance.

I may be allowed to conclude this ſubject without entering into a detail of the manner in which premature labour may be brought on; becauſe no perſon qualified to decide on the propriety of this operation can be ignorant of the manner of performing it. I muſt however obſerve, when the membranes of the *ovum* are punctured or ruptured, and the water

water diſcharged, that the time when the action of the *uterus* may come on will be very different; this happening in ſome inſtances in twelve hours, and in others, being withheld, for twelve or fifteen days. During this interval we have only to wait patiently for the event, and when the pains come on, the labour, if natural, is to be ſuffered to proceed without interruption; or, if irregular, ſuch aſſiſtance is to be given as the peculiarity of the caſe may require.

## CHAP. X.

### SECTION I.

### ON THE CESAREAN OPERATION.

THIS operation is to be performed by making an inciſion firſt through the integuments of the *abdomen*, and then into the *uterus*, for the purpoſe of extracting a child therein contained. In caſes of extra-uterine children, an inciſion, for the purpoſe of extracting a child contained in the cavity of the *abdomen*, under various circumſtances, has been called the *Ceſarean* operation; but in the importance and conſequence of theſe two operations there is an evident and very great difference.

It has been ſuppoſed by ſome writers that a name was given to this operation from a circumſtance common to it and every other in ſurgery where a knife was uſed*; by others, that it had its name from the extraordinary courage of the perſon on whom, or

* *A cæſo matris utero.*

by

by whom, it was performed: but it was more generally explained by the imagined qualities and rank of the perſons whoſe lives are ſaid to have been preſerved by it. Theſe, and their deſcendants, according to *Pliny*, were called *Cæſars*, as thoſe born with the feet foremoſt were called *Agrippæ*; or when there were twins, and only one was born living, *Vopiſci*. Men who in the courſe of their lives proved extraordinary, were not ſuppoſed to come into the world in a common way *. But it is well known that the name of *Cæſar* was not conferred on that great man, or the family who bore it, from the manner of his birth, but was derived from quite another ſource. Nor do any of the ancient writers in medicine take notice of this operation, and we cannot ſuſpect they were ſo negligent as to have omitted the deſcription of it, or ſo ignorant as to be unacquainted with it, when, in all probability, had it been performed, they would have

* *Auſpicatius, enecta parente, gignuntur, ſicut Scipio Africanus prior natus, primuſque Cæſarum a cæſo matris utero dictus.*

PLIN. *Hiſtor. Nat. lib.* vii. *cap.* ix.

The mother of *Cæſar* was living at the time of her ſon's expedition to *Gaul*.

been

been the very perſons conſulted and employed to perform it.

*Pliny* *, who lived in the time of *Veſpaſian*, is the firſt author who mentions this operation; but he ſpeaks of it with reference to thoſe who lived before his time, and his account does not give much ſatisfaction. *Rouſſet* †, who was a ſtrong advocate for the operation, wrote profeſſedly on the ſubject in the year 1581. But the records of this operation have been imperfectly preſerved even in modern times. For, from the context of the caſes recorded, it appears that ſome have been miſrepreſented; that ſome are fictitious, and were alleged to anſwer other purpoſes, as was the ſuppoſed one of lady

* *Plin. loco citato.*

† *Bauhin*, in the appendix to *Rouſſet*, dated 1588, gives the following caſe:—*Eliz. Aleſpachen* had this operation performed upon her by her huſband, who was a Gelder of Cattle at *Siergenhauſen* in *Germany*, in the beginning of the ſixteenth century. She had ſeveral children born afterwards in the natural way.

*Paré* and *Guillemeau* wrote againſt the operation.

*M. Simon* wrote two papers on this ſubject in the firſt volume of the memoirs of the *Royal Academy.*

*Heiſter* and many others have written on the ſubject; but *Weideman* of *Duſſendorp*, in his *Theſis*, has given an account of all the caſes of this operation that were extant, and the event of them.

*Jane*

*Jane Seymour*, to ſtamp the character of greater cruelty on *Henry* the *Eighth*; and that others are related with a change of circumſtances, ſo as to appear different, though they were in fact the ſame. From a deteſtation of the apparent cruelty of this operation, from a doubt of its neceſſity or propriety, from the deſtructive event which was to be expected, or from ſome other cauſe, it was never performed in this country till within theſe few years. But at preſent we have well authenticated accounts of nine caſes in which the operation was performed, under the direction of, and by, men of unexceptionable abilities; and theſe may be eſteemed ſufficient to enable us to form a judgment of the advantages to be derived from the operation, as well as of the manner in which it ought to be performed.

## SECTION II.

By the firſt writers on this ſubject many circumſtances are recited which were ſuppoſed

poſed to render this operation neceſſary, ſome reſpecting the parent, others the child. Of the firſt kind were the ſmallneſs or diſtortion of the *pelvis*, the ſtraitneſs or cloſure of the natural paſſages, from *cicatrices*, the rigidity of the parts from old age, or their imperfection from youth; almoſt every cauſe of a difficult labour, when extreme in its degree, has been mentioned as a poſſible reaſon for this operation. Thoſe which reſpected the child, not only related to its comparative ſize, but its poſition alſo; and on this occaſion twins, and even monſters, which there was no wiſh to preſerve, have been mentioned. But, whatever was the exiſting cauſe, it appears that there muſt have been a full conviction on the mind of the perſon who propoſed this operation, of the impoſſibility of delivering the patient by any other means. Some writers have indeed ſpoken of this operation, not with a view to its abſolute neceſſity, but its eligibility, or as deſerving preference to other methods of delivery which might be practicable. Such writers have not met with general approbation, but their influence has been too great; for, in the hiſtories of the caſes recorded, we find

find in ſeveral of them ſome circumſtance which proves that the operation was not neceſſary, or that the grounds on which it ought to be performed were not well underſtood. The ideal glory of the operation has perhaps had its influence in *France*, and ſome other parts of the *Continent*. I am not willing to accept any other principle but neceſſity as a juſtification of this operation; that is, whenever it is propoſed, there ſhall be no other way or method, by which the life, either of the mother or child, can poſſibly be preſerved; and the impoſſibility ſhall be confirmed, not by the opinion of one, but as many competent judges as can be procured. I then conſider this operation juſtified by every principle of religion, and the laws of civil ſociety, by as deciſive and ſatisfactory evidence as any other operation, which we never heſitate to propoſe, or to perform.

## SECTION III.

THREE general ſituations have been ſtated in which it has been preſumed the Ceſarean operation might be neceſſary.

1. When

1. When the parent was dead, and the child living.

2. When the child was dead, and the parent living.

3. When both the parent and child were living.

With reſpect to the firſt ſituation, when the parent is dead, and the child living, there cannot be any debate; becauſe, without giving pain, or incurring any one inconvenience, an attempt is made by this operation to preſerve the life of a child, which, if it be not performed, muſt ſoon and inevitably periſh.

With reſpect to the ſecond ſituation, as, in every caſe in which the operation has been performed in this country, the parent has died, but the lives of many of the children have been preſerved, the operation holds forth as its principal advantage, the hope of preſerving the life of the child; the chance of preſerving the parent being little improved by an operation ſo full of danger. It will therefore, I think, be generally acknowledged, that the operation ought not to be performed upon a living mother, when there

is

is proof, or good reaſon, for believing that the child is dead.

The third is the ſtatement attended with any difficulty, and being the only caſe which, ſtrictly ſpeaking, conſtitutes the Ceſarean operation, it might lead to a comparative eſtimation between the life of the child and that of the parent. But the common ſenſe of mankind, agreeing in the general principles adopted throughout this work, of its ever being our duty, in the firſt place, to preſerve the lives of both the parent and child; in the ſecond, to preſerve the life of the parent; and in the third, that of the child, which have been on various occaſions inculcated and applied, will point out the general line of conduct we ought to purſue, according to the exigence of every caſe which may occur in practice.

Without regard to the ſtate of the child, this operation has alſo been propoſed for our conſideration under circumſtances which relate to the mother alone.

1. When ſhe was living.
2. When ſhe was dead.

Some have been of opinion, that this operation ought never to be performed on the

 living

living ſubject. Perhaps, impreſſed with the dread of the operation, they did not diſtinguiſh between neceſſity and eligibility, and therefore wiſhed to aboliſh it altogether. But if it were to be performed only when the patient was dead, more particularly if we were to wait for her death, as the only proper time of performing it, it would in general be fruitleſs. For I do not find any inſtance of a living child extracted by this operation after the death of the mother, unleſs the child eſcaped by the ſame ſtroke as that which proved fatal to the mother, of which the accounts ſeem to be almoſt fabulous, or merely accidental. But as, in caſes of women dying in convulſions, rupture of the *uterus*, or other rapid diſeaſes, at different periods of pregnancy, or of a labour, it is poſſible for a living child to be extracted after the death of the mother, by ſpeedily performing this operation; and as no harm can poſſibly reſult from the operation, ſuppoſing ourſelves diſappointed, no reaſonable objections can be made to our performing it under ſuch circumſtances. In ſome countries the laws forbid a woman dying, when pregnant, to be interred before the child ſhall

be

be taken away. A prohibition to bury the living with the dead is the ſpirit of ſuch laws.

## SECTION IV.

If it be admitted that neceſſity alone can juſtify the Ceſarean operation, we are next to enquire into the cauſes and proofs of ſuch neceſſity.

Many of the cauſes which have been ſpecified by writers, as producing a neceſſity of performing this operation, are certainly unequal to ſo great an effect. The ſize of a child, however large, unleſs the *pelvis* be at the ſame time very much diſtorted; nor any untoward poſition of the child; nor twins; nor monſters; nor the cloſing or ſtraitneſs of the ſoft parts, can ever compel us to the neceſſity of performing this operation; becauſe we know, by experience, that difficulties ariſing from ſuch cauſes admit of relief by leſs deſperate means. It may be aſſerted in general terms, that there is only one cauſe which can juſtify our propoſing or

performing this operation on the living ſubject, and that is, ſuch an extreme degree of diſtortion of the *pelvis* as renders the extraction of the child, in its preſent ſtate, when diminiſhed in its bulk, or even reduced into ſmall pieces, abſolutely impracticable. It is true, if any other cauſe could be proved to exiſt which produced the ſame impracticability, then the operation would be equally requiſite and juſtifiable.

To make a preciſe ſtatement of that degree of diſtortion, or conſequent diminution of the cavity of the *pelvis*, as might require this operation, is not perhaps poſſible in the living ſubject. The natural ſpace of the cavity of a well formed *pelvis*, from the *os pubis* to the *ſacrum*, is about four inches and a half, and in ſome ſubjects rather more; and the heads of children at the time of birth bear a general relative proportion to this ſpace. But living children have been born, frequently, by the natural efforts, when the ſpace was preſumed to be leſs than four inches; and, if the children were ſmall, when it did not exceed three inches: and we may judge that the head of a child is capable of being reduced by compreſſion one third of

its

its natural bulk, without deſtruction of parts, or any permanent injury. But ſhould the capacity of the *pelvis* be reduced under three inches, we have not much reaſon to expect a living child to paſs through it, either naturally, or by the aſſiſtance of art; though the head of one that is dead, eſpecially if it be putrified, may be preſſed through a *pelvis* of about thoſe dimenſions, even without artificial aſſiſtance. Should the capacity of a *pelvis* not exceed, according to our judgment, two inches and a half, then the head of a child, unleſs the contents be evacuated, could not paſs or be extracted through it. But if the cavity be ſo far cloſed, that it ſhould not exceed one inch, we might then preſume that the head of a child, though reduced to the leaſt poſſible ſize, could not be extracted through it; and the neceſſity and propriety of the Ceſarean operation might be admitted, if we had reaſon to conclude that the child was living.

Theſe general poſitions every perſon engaged in practice will bear in his mind, in caſes of difficulty ariſing from diſtortion of the *pelvis*. But he muſt alſo recollect, that the remaining ſpace of the cavity of the *pelvis*, in caſes

of diſtortion, will be differently eſtimated by different perſons, and cannot be aſcertained with preciſion by any one, during the life of the patient. He will alſo remember, that the kinds of diſtortion are as various as the degrees, and that the cavity, though much diminiſhed in one part, may be far leſs altered in another; and that even one ſide of the *pelvis* may meaſure two inches, when the other is ſcarcely equal to one, which conſideration may make a change in our judgment of the kind of operation required widely different. It ſhould alſo be remembered that the ſize of children at the time of birth, and the firmneſs of the bones, together with the compactneſs of their union with each other, are very different, and might add to, or leſſen, the difficulty of a birth, whether natural or artificial. After a mature conſideration of the whole matter, I am however of opinion, that no rule of ſufficient authority to guide us in any particular caſe can be formed from ſuch calculations, and that our conduct is not to be governed wholly by them; but by the reflections of common ſenſe working in a reaſonable mind, ſtored with the knowledge of ſuch calculations, and of many

other

other collateral circumſtances, which it is impoſſible to enumerate or deſcribe, ſo as to render them applicable and uſeful.

I cannot however relinquiſh the ſubject without mentioning another ſtatement of this queſtion, which has often employed my mind, eſpecially when the ſubject has been actually paſſing before me. Suppoſe, for inſtance, a woman married, who was ſo unfortunately framed, that ſhe could not have a living child. The firſt time of her being in labour, no reaſonable perſon could heſitate to afford relief at the expence of her child; even a ſecond and a third trial might be juſtifiable to aſcertain the fact of the impoſſibility. But it might be doubted in morals, whether children ſhould be begotten under ſuch circumſtances, or whether, after a determination that ſhe cannot bear a living child, a woman be entitled to have a *number* of children deſtroyed for the purpoſe of ſaving her life; or whether, after many trials, ſhe ought not to ſubmit to the Ceſarean operation, as the means of preſerving the child at the riſk of her own life. This thing ought to be conſidered. Moreover, when it has been aſcertained, that women could not poſſibly bear living children,

and one great end of marriage has been fruſtrated, ſome have determined on a voluntary ſeparation from their huſbands, from a ſenſe of the moral turpitude of conceiving children without the chance of bringing them living into the world. But the law of the land has afforded no remedy for the caſe, though, as this fact admits of unqueſtionable proof, it would not be difficult to form terms of ſeparation between a huſband and wife thus circumſtanced, ſo cautiouſly, that they ſhould not be abuſed, yet without the imputation of criminality to either party; and many evils might be thereby prevented.

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## SECTION V.

In every caſe in which the Ceſarean operation has been performed in this country the patients have died. It may be of uſe to enquire, whether their death was occaſioned by any diſeaſe with which they were afflicted before the time of labour; or was the conſequence of the ſtate to which they were reduced from the occurrences of labour, before the

the operation was performed; or was the inevitable conſequence of the operation. In caſes of death occaſioned by wounds, the following order in which the danger is produced may be obſerved: firſt, from convulſions, or hemorrhage; ſecondly, from inflammation; thirdly, from gangrene; fourthly, from ſuppuration. Though all the patients on whom this operation has been performed died, their death happened at different periods; but not one died, either while the operation was performing, or immediately after it. No convulſions were brought on by the inciſions, nor does it appear that any of them ſink through the loſs of blood accompanying or ſucceeding the operation. Some died within twelve, others at the end of twenty-four hours, and a few died on the third day after the operation. If we may judge of the cauſe of the patient's death by the time of her dying, it might be ſaid, that the death of thoſe who failed within twenty-four hours, was probably owing, not to the operation alone, but to the violence of this, combined with that of previous diſeaſe; but when they ſurvived twenty-four or forty-eight hours, then their death might be attributed

to the ſucceeding inflammation, in a body before diſpoſed to diſeaſe. If we had the liberty of ſelecting a patient on whom to try the merits of this operation, we certainly ſhould not chooſe one who was either very much diſtorted, or who had the *mollities oſſium*, or who had been ſeveral days in labour; becauſe the event muſt very much depend upon her ſtate at the time when the operation was performed.

It is not my intention by this kind of inveſtigation to leſſen the general averſion from this operation when it can be avoided; but I believe we cannot fall into error by conforming to ſuch concluſions as theſe. Every woman on whom the Ceſarean operation ſhall be performed will probably die, and ſhould any one ſurvive, her recovery might rather be conſidered as an eſcape than as a recovery to be expected; but as ſuch an eſcape may happen in any caſe, in which the operation might be performed, we may eſteem every caſe which can come before us, as the individual caſe in which a happy event is to be expected. Theſe concluſions will lead us to the principle of neceſſity as the ſole juſtification

of

of this operation, and inſpire us, when we do perform it, with every motive to exert all our judgment and ſkill for the ſervice of the patient, as if we were certain ſhe would ſurvive.

## SECTION VI.

HAVING never performed the Ceſarean operation, nor ſeen it performed, I offer the deſcription of the caſe related in the fourth volume of the *Medical Obſervations* and *Inquiries*, as the beſt example which has been recorded; the operation was performed by Mr. *Thomſon*, one of the ſurgeons of the *London Hoſpital**.

" A table being prepared, the patient was placed upon it, lying on her back, her head being ſupported by pillows, and her legs hanging down. The belly appeared promi-

* It is remarkable that the oldeſt phyſician or ſurgeon in *London*, could not recollect a caſe of this operation, or had heard it ſpoken of by their predeceſſors; yet that two caſes, in the ſame ſtreet, ſhould have occurred to one gentleman, within a very ſhort ſpace of time.

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nent chiefly on the right ſide, the protuberance of the *uterus* extending but about two or three fingers breadth on the left of the *linea alba*. There was no difficulty therefore to determine where the inciſion was to be made.

" Accordingly, about a hand's breadth from the navel on the right ſide, I began the inciſion in a longitudinal direction, and continued it about ſix inches in length, the middle of which was nearly oppoſite to the navel; the ſkin and adipoſe membrane being cut through on the outer edge of the *rectus* muſcle. I carefully made an inciſion through the tendinous expanſion of the abdominal muſcles and the *peritonæum*, ſufficient to introduce the forefinger of my left hand, when, with a curved knife conducted on my finger, an opening was made into the cavity of the *abdomen*, and the *uterus* expoſed.

" The *uterus* appearing very ſolid to the touch, it was apprehended by ſome gentlemen, that the *placenta* might perhaps adhere to that part of the *uterus* which lay bare, and which might conſiderably obſtruct the removal of the child, or endanger an hemorrhage. With precaution, therefore, an aperture

ture was made in the centre of the *uterus* ſufficient to admit my finger, with which conducting the curved knife, I dilated the wound in the *uterus*, upwards and downwards, to the full extent of the outward wound.

" The *placenta*, which actually adhered to this part of the *uterus*, eaſily gave way, and receded as my finger advanced in making the opening.

" The *placenta* and membranes immediately began to protrude. Dr. *Ford* at this juncture ſlipping his hand into the *uterus*, while the ſides were kept aſunder, brought forth the child by the feet, and immediately afterwards the *placenta* and membranes were extracted with the greateſt eaſe. Dr. *Ford* took upon himſelf the management of the child and ſeparation of the umbilical chord, and in a few minutes the child cried ſtrongly.

" The *uterus* being diſburthened of its contents, and contracting amazingly faſt, the *omentum* and bowels began to protrude; Mr. *John Hunter* was ſo obliging as to aſſiſt me in retaining them within the belly, whilſt I cleanſed away the grumous blood (which

was

was ſmall in quantity) and made the *gaſtrorraphy* or ſuture of the belly.

" I made four ſutures at nearly equal diſtances from each other, and about one inch and half from the edge of the lips of the wound.

" The ligatures being double, pieces of linen ſpread with common plaiſter, and rolled up in the form of bolſters, or compreſſes, were applied between them, after the manner of the quilled ſuture, and the wound was thereby brought into and retained in cloſe contact; and lint and a common pledget being applied, finiſhed the operation." This woman died about five hours after the operation.

# ANOMALOUS, or COMPLEX LABOURS.

## ORDER SECOND.

### LABOURS ATTENDED WITH CONVULSIONS.

ST. MARY'S HOSP.
RADFORD
LIBRARY
MANCHESTER

### SECTION FIRST.

THE rules given by different writers for the management of labours attended with convulsions, ſeem to have been founded on leſs certain principles, and to have been leſs confirmed by experience, than thoſe which have been given for almoſt any other caſes which occur. Theſe rules have nevertheleſs led to two methods of practice, offered with ſufficient confidence, though diametrically oppoſite to each other. According to the firſt*, which has been moſt generally approved

* La convulſion eſt un autre accident qui fait ſouvent perir la mere et l'enfant, auſſi bien que la perte de ſang, ſi la

approved and followed, it was deemed indiſpenſably neceſſary to deliver the patient by art, as expeditiouſly as poſſible, to free her from the cauſe of the impending danger. But according to the ſecond*, it being preſumed that the convulſions appertained to the labour as ſymptoms, this, if natural, was to be ſuffered to go on without interpoſition, as if there were no convulſions; while we were engaged in uſing the means of preventing their return, or of leſſening the effect which might be produced by them. Whatever has been done or omitted, has occaſionally been blamed or regretted, and, in conſultations on caſes of this kind, I have generally obſerved, that the perſon who advanced his opinion in the boldeſt manner, prevailed on the reſt to acquieſce in his ſentiments; the records of experience having been thought inſufficient, or not ſo duly weighed as to juſtify our forming an irrefragable rule of practice.

la femme n'eſt tres promptement ſecourue par l'accouchement, qui eſt le meilleur remede qu'on puiſſe apporter à l'une et a l'autre. *Mauriceau*, vol. i. cap. 28.

* Naturæ, partus quoad cætera ſanus, relinqui poteſt. *Roederer*, Element. Art. Obſteric. Aphoriſm. 697.

The

The true puerperal convulſions have not been accurately deſcribed, yet there are ſome peculiarities in the ſymptoms preceding their appearance, and in the convulſions or the manner of their return, which diſtinguiſh them from every kind of hyſteric ſymptom, and from convulſions proceeding from other cauſes. Together with the ſymptoms of the epilepſy *, which they very much reſemble, there is not unfrequently a *ſtertor*, which has been conſidered as peculiar to the apoplexy, or the patients are obſtinately comatoſe. With the foaming at the mouth there is alſo a ſharp hiſping noiſe produced by fixing the teeth, and by the ſudden motion of the under lip, as if attempts were made to retract the *ſaliva* back into the mouth; and by this noiſe I have generally been able to diſcover the ſtate of the patient, though ſhe was in another room. The in-

* Epilepſia—Agitatio convulſiva univerſalis, chronica, cum oppreſſione ſenſoriorum, exituque ſpumæ ex ore. VOGELIUS.

Epilepſia—Muſculorum convulſio cum ſopore. CULLEN.

Convulſio—Muſculorum contractio, clonica, abnormis citra ſoporem. CULLEN.

Spec. 2. 1. Idiopathica.
2. Symptomatica.

 tervals

tervals between the convulſions, which are of ſhorter or longer duration according to the advancement of labour, evidently depend upon the action of the *uterus*, and in them the patients ſometimes ſeem as if they were awakened by ſurpriſe, and ſoon recover the uſe of their faculties; and, at others, lie in an inſenſible ſtate as if they were truly apoplectic, which they are not; though there have been inſtances of patients dying in the firſt attack, when there was no token of labour, as far as could be judged by the ſtate of the *os uteri* *. By the degree of derangement

* In the examination of many women who have died in convulſions, I have never ſeen an inſtance of effuſion of blood in the brain, though the veſſels were extremely turgid; but it is remarkable, that in all, the heart was found unuſually flaccid, and without a ſingle drop of blood in the auricles or ventricles; and in ſeveral there inſtantly appeared many large livid ſpots on the extremities and ſurface of the body. They all died immediately after the *diaſtole* of the heart.

A woman in labour was put to bed, and made an effort to change her ſituation. She died inſtantly in the act of moving.

Another was in ſuch a ſituation that the child was expected to be born the next pain. She threw herſelf back, and died inſtantly.

Another

ment in the intervals between the convulſions, the danger of the patient is to be eſtimated, as well as by the violence of the fits, or by the ſymptoms which preceded them.

It will be convenient to arrange what I have to ſay farther on this ſubject, in the following order: firſt, to enumerate the reputed cauſes of convulſions; ſecondly, the ſymptoms which precede their appearance; thirdly, the means of preventing them; fourthly, the treatment which may be requiſite when the patient is actually in convulſions; and, fifthly, on the delivery by art.

Another raiſed herſelf in bed to take nouriſhment, about half an hour after delivery. She fell back, and died immediately. She was opened by Mr. *Jenner*.

There was no effuſion of blood in the brain, or any other part in any of theſe; but the heart was found flaccid, perhaps ſomewhat enlarged, and not a drop of blood in either the auricles or ventricles. Yet the late Mr. *Hewſon* informed me of a caſe of convulſions in which, on examination after death, he had found an effuſion of blood, in a ſmall quantity, on the *ſurface* of the brain.

## SECTION II.

### ON THE REPUTED CAUSES OF CONVULSIONS.

It is remarkable that puerperal convulſions occur ſo rarely in the country, that I have not been able to make ſome very intelligent men, of great experience, comprehend them. The very few caſes of which I have been informed, out of this city, have happened in large towns, or among thoſe who might be reckoned in the higher ranks of life. We may therefore conclude, that a remote cauſe of theſe convulſions is to be ſought for in the particular influence of the air, or in ſome change made in the conſtitution, by the cuſtoms and manner of living in cities and large towns; though there are immediate cauſes capable of producing theſe convulſions in any ſituation. It has alſo been obſerved, that women are far more liable to convulſions in certain years and ſeaſons than in others.

The female conſtitution becomes infinitely more irritable in conſequence of the changes made in the *uterus* during pregnancy, every part of the body readily participating with the ſtate of the *uterus*. This increaſed irritability,

irritability, when not exceſſive, and only affecting parts not eſſential to the economy of the conſtitution at large, is ſo far from being injurious, that it proves eventually ſalutary either to the parent or child. But we may conclude, that in a conſtitution become unuſually irritable from one cauſe, any additional cauſe of morbid irritation will produce different and more violent effects, than if that conſtitution had been at reſt, before the application of the ſecond cauſe. It is therefore reaſonable to believe, that the conſtitution which a delicate mode of education can ſcarce fail to give, ſtill farther augmented by habits of indulgence, and the eager purſuit of pleaſure in advanced age, renders ſuch women at all times, and in all ſituations, more liable to every kind of nervous affection; that the ſtate of pregnancy ſtill makes them more diſpoſed to the ſame affections, and from ſlighter cauſes to convulſions, than thoſe women are who, by educations and habits of living, are ſeaſoned, as it were, againſt impreſſions which might affect either their minds or conſtitutions; for it is to both theſe we are to look for the cauſes of convulſions.

That the ſtate of the mind does very often diſpoſe women to puerperal convulſions, and other dangerous nervous affections, there are numerous proofs to be drawn from practice*. This has been more particularly obſerved among thoſe women whoſe unfortunate ſituations render pregnancy an evil inſtead of a bleſſing; for, from their ſecluſion from ſociety, their ſenſe of preſent ill, or apprehenſion of future diſtreſs, ſuch women are eſpecially ſubject to convulſions at the time of labour, and to become maniacal after their delivery. It has alſo been obſerved that, from violent and ſudden impreſſions on the mind, more generally from terror than any other, pregnant women have either immediately had convulſions, or fallen into a ſtate which ſhewed a great propenſity to them, though they did not appear before the acceſſion of labour. In ſome caſes however, from a ſtate of apparently perfect health, the firſt ten-

* There is a moſt intereſting hiſtory of this in the Bible, 1 *Samuel*, *chapter* iv. and three remarkable circumſtances are mentioned; firſt, the cauſe, the violent agitation of her mind; ſecond, her ſtate of inſenſibility; third, that the child was born living, though the mother died immediately after his birth.

dency to labour has produced convulſions, which have continued till the child was born, or afterwards, or the patient died; though in other caſes the convulſions have been removed, and the labour has proceeded with great regularity. But there is often reaſon to ſuſpect, that when convulſions have once appeared, they make to themſelves new cauſes of their return, as they have continued for many hours, or even days, after delivery. There is likewiſe reaſon to think that cauſes, ſeemingly too trifling to produce convulſions, have ſometimes been equal to the effect; as I recollect two inſtances of women who had convulſions at the time of labour, preceded by violent headachs, brought on, as it appeared, by the uſe of ſome mercurial preparation mixed with the powder uſed for their hair.

But it is not only in weak and very nervous habits that convulſions occur, as they ſometimes happen in plethoric conſtitutions, and are accompanied with a ſtrong action of the vaſcular ſyſtem in general, or of ſome particular part of the body; though I have never ſeen a caſe which could be attributed ſolely to this cauſe. With ſuch different

conſtitutions and indications, ſome with all the ſymptoms of debility and depreſſion, and others of plethora and fever, the method of treatment muſt of courſe vary; and great judgment will be required to ſuit the proper method, if it can be diſcovered, both in the degree and the extent to which it ought to be carried, to the ſtate of every individual patient.

Beſides the general affections of the body, which may be ſuppoſed to give a diſpoſition to convulſions, affections of different parts, as of the inteſtinal canal or bladder, if they ſhould be too much loaded or diſtended, may have the ſame power *. But in the female conſtitution the *uterus* is the great ſource of irritability, and of courſe every cauſe capable of diſturbing that part beyond a certain degree, or in an unnatural manner, may affect the whole frame, according to the kind and degree of the original affection. Yet all the parts of the *uterus* do not appear equally

* Ad ſpaſmodica, quæ ex uteri vitio proveniunt, pathemata concitanda, non opus ſemper erit, ut materia corrupta et vitiata, utero inhærens, proximè et immediate id efficiat. *Hoffman*, de Mal. Hyſteric.

liable

liable to be diſturbed, for the *os uteri* is evidently the moſt irritable part, even in a natural ſtate, as well as when diſturbed by any morbid or adventitious cauſe *. Hence it appears in pregnant women, on the firſt tendency to labour, that the changes which that part undergoes occaſion a variety of nervous ſymptoms; and that theſe may be brought on, increaſed, or continued, if they before exiſted, by artificial or imprudent dilatation of the part in the courſe of labour, when it is unuſually rigid; or with an increaſed degree of irritability occaſioned by inflammation †.

It has been preſumed, that the preſſure made by the expanded *uterus* upon the de-

* In a caſe of this kind, which was publiſhed twenty-three years ago, I obſerved, "When the *os internum* began to dilate, I gently aſſiſted during every fit; but being ſoon convinced that this endeavour brought on, continued, or increaſed the convulſions, I deſiſted, and left the work to Nature."

† A woman, whoſe caſe was communicated to me by Dr. *Mackenzie*, though the convulſions ceaſed after delivery, died on the fifth day of the puerperal fever. In almoſt every caſe of convulſions that I have ſeen, there was evidently, after delivery, a greater or leſs degree of abdominal inflammation.

ſcending

ſcending blood veſſels, cauſing a regurgitation of the blood to the ſuperior parts of the body, to the head in particular, by overloading the veſſels of the brain, produced convulſions. This opinion applies to a cauſe very general indeed, and, if true, muſt have had its effect ſo frequently as not to remain in doubt. But it was before obſerved, that plethoric habits were univerſally leſs ſubject to convulſions of this kind than the feeble and irritable ones, and that they ſometimes continued with equal violence after the birth of the child, when this cauſe was removed.

Women are far more liable to convulſions in firſt than in ſubſequent labours; and then, it is ſaid, more frequently when the child is dead than when it is living. But when women have convulſions, the death of the children ought generally to be eſteemed rather an effect than a cauſe, as they have often been delivered of living children when they were in convulſions; or of dead and even putrid children, without any ſigns of convulſions. Some women have alſo had convulſions in ſeveral ſucceſſive labours; but, having had them in one, they generally, by the precautions taken, or ſome natural change, eſcape them

them in future. Laſtly, I was for many years perſuaded that convulſions only happened when the head preſented; but experience has proved that they ſometimes occur in preternatural preſentations of the child.

## SECTION III.

### ON THE SIGNS WHICH PRECEDE CONVULSIONS.

PUERPERAL convulſions are often preceded for many hours, or for ſeveral days, by a vacillation of the mind, joined with a ſlight delirium.

Swimming in the head, and other vertiginous complaints, in the later part of pregnancy, or in women in labour, not unfrequently forebode convulſions.

Violent or piercing pain of the head, preceding or recurring with the pains of labour, with ſimilar ſigns of a diſturbance of the functions of the brain, often denote convulſions *.

When

* The lady of Captain C. who was at the full period of uterogeſtation, after complaining about twelve hours of

When women in labour frequently complain of blindneſs, they are in danger of convulſions.

Convulſions are often preceded by violent pain or cramp at the ſtomach.

Convulſions preceded by violent pain or cramp at the ſtomach, are uſually more dangerous than thoſe which are preceded by affections of the brain only; and they ſometimes cauſe ſudden death by ſtopping the action of the heart.

Women who have a rigor on the returns of the pains of labour, are in ſome danger of falling into convulſions*.

Women in labour, who have great ſwelling or fulneſs of the neck, joined with an enlargement of the features of the face, and a ſtaring or protruſion of the eyes, often fall into convulſions.

of the excruciating pain in her head, coming on at intervals, fell down dead as ſhe was walking acroſs the room.

* All rigors may be conſidered as a degree of convulſions; but theſe happen in labours frequently, though not always, without any ill conſequences. I ſaw a feeble woman ſeized immediately after her delivery with a rigor, which, in ſpite of all the means which could be uſed, continued for twenty-five minutes, and then ſhe died. Her labour had been very ſlow, but was perfectly natural.

I have

I have not known any woman, who had frequent vomitings in the time of labour, fall into convulſions; nor do they often happen in difficult labours.

The danger of caſes attended with convulſions is not increaſed by their frequent return; as theſe depend upon the frequency of the action of the *uterus*, and not upon an increaſe of the cauſe of the convulſions.

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## SECTION IV.

### ON THE MEANS OF PREVENTING CONVULSIONS.

For the prevention of common accidents it appears reaſonable and proper, that women far advanced in pregnancy ſhould avoid all irregularities in their manner of living, and every ſituation where they may be under reſtraint; or they will be liable to many complaints and inconveniencies*. At the

* Gregarious animals, when pregnant or giving ſuck, chooſe a place in the herd, different from what they take at other times.

time

time of labour it is a rule generally obſerved, that their minds ſhould be kept compoſed, their apprehenſions quieted, their preſent ſufferings ſoothed by the tenderneſs of their friends and attendants; that they ſhould be encouraged with the hope of a happy event, and that the knowledge of every thing which might agitate or diſtreſs them ſhould be concealed. But when any ſymptoms of diſeaſe appear, beſides theſe precautions, ſuch means as the conſideration of any particular caſe may indicate to be neceſſary are to be uſed; and no ſymptoms can require more attention than thoſe which have been recited as threatening convulſions.

Bleeding is known to leſſen, in a moſt effectual manner, all the complaints in pregnancy which ariſe from uterine irritation, and to a certain degree, in pregnant women, from all other cauſes. It is therefore, I may ſay, univerſally recommended in all caſes, when theſe convulſions are apprehended. The quantity of blood to be taken away, and the repetition of the operation, muſt depend upon the ſtrength of the patient and the violence of the ſymptoms. But as, in ſome caſes of this kind, there are alſo tokens of general

debility,

debility, and a great dread of the operation, it will then be preferable to uſe local bleedings, by ſcarification and cupping at the nape of the neck, by the free and frequent application of leeches, or ſometimes by cutting the temporal artery; a thing ſo eaſily done as not to deter us from the practice, and often ſo efficacious as to invite our doing it on many other occaſions.

When theſe ſymptoms are accompanied with others which denote much diſturbance of, or the lodgment of any offenſive matter in, the ſtomach, emetics may be given with ſafety and advantage*. In many affections of the brain it has been thought that emetics afforded ſingular benefit; and when theſe convulſions have been threatened, after the

* A very ſhort time ago, a lady had many ſevere attacks of this violent pain in the head, in the later part of her pregnancy; this was conſtantly relieved by the application of leeches to her temples. When ſhe fell into labour ſhe became blind, and had one convulſion. Having great ſickneſs at her ſtomach, without vomiting, I urged her to irritate her throat with her finger, by which means ſhe vomited five or ſix times, and had no fit afterwards; the blindneſs remained in ſome meaſure for ſeveral days after her delivery. The child had been dead about a fortnight.

operation

operation of an emetic, patients have been ſometimes wonderfully relieved. Care is alſo to be taken to regulate the ſtate of the bowels, whether they be too much relaxed or conſtipated.

Towards the concluſion of pregnancy ſome women are ſubject to violent cramps in various parts of the *abdomen*, or inferior extremities, together with complaints in the head or ſtomach. Should not theſe be relieved by the cuſtomary means, the warm bath may be adviſed, and from its daily uſe they will often find much benefit.

Objections have been made to the frequent or habitual uſe of opiates for ſlight complaints in pregnant women; and there is much reaſon to ſuſpect that they often prove injurious to the child. But theſe objections do not apply to their occaſional uſe when they are really neceſſary. Yet as, in very large doſes, opiates have been known to produce convulſions, it ſeems better to give them in ſmall quantities often repeated, than in a large doſe at one time*.

Nervous

* The late Dr. *Hunter* informed me of the caſe of a patient who had convulſions, preceded by the violent pain

Nervous medicines of every kind are uſually given on theſe occaſions, rather with the intention of procuring temporary relief than permanent advantage; yet they ought not to be neglected. But, on the whole, it appears that in bleeding, and keeping the ſtomach and bowels in a healthy ſtate, in giving opiates, and in the occaſional uſe of the warm bath, we have the principal means, as far as can be judged either by reaſon or experience, of preventing puerperal convulſions, of inſuring, in general, an undiſturbed labour, and an uninterrupted recovery.

## SECTION V.

### ON THE TREATMENT OF CONVULSIONS.

FROM the attack of convulſions without any previous ſymptoms, or from the want of

pain at the ſtomach; on the approach of her next labour ſhe was attacked with the ſame kind of pain. She was immediately bled largely, and took thirty drops of *Tinct. Opii*, by which the pain was removed. She was delivered after an eaſy and natural labour.

attention to thoſe ſymptoms, we have much more frequently an opportunity of exerciſing our judgment in curing than in preventing convulſions. Theſe, it was before obſerved, may come on in the beginning, or in the courſe of a labour; or, which is more rare, though not leſs dreadful, after the birth of the child; and ſome difference of treatment may be requiſite, according to the time of their appearance. But, whenever they do come on, the danger is ſo manifeſt, and ſo alarming, as to call for the immediate exertion of all the powers of medicine for the relief of the patient.

The firſt and moſt obvious remedy in a caſe of ſuch violent agitation of the whole frame, and ſuch obtuſion or perverſion of the mental faculties, is, to take away a proper quantity of blood from the arm; for the direct good which may be expected to be gained by bleeding ſpeedily, as well as for the prevention of the miſchief which might follow the convulſions. One copious bleeding has ſometimes entirely removed the convulſions, which have not returned; but, ſhould theſe continue with equal force for a certain time, it will be expedient, for the particular

particular eaſement of the head, to try the effect of local bleedings. Leeches are too ſlow in their operation; and ſcarification, with cupping, could not be done without much difficulty; ſo that the two methods, moſt applicable and adequate to the urgency of the caſe, are, to open the temporal artery, or the jugular vein; and the latter has certainly been found preferable, perhaps becauſe the blood is thereby diſcharged with greater velocity*. Objections are ſometimes made to bleeding, leſt there ſhould be a difficulty in reſtraining the blood while the patient is ſo much diſturbed; but there is no hazard, and the caſe does not admit of delay. The bleeding, from whatever part the blood may be drawn, is to be repeated according to the effect produced, the ſtrength of the patient, and the violence or continuance of the ſymptoms †.

The

* For a patient who was lying in a ſtate which deprived me of all hope of her recovery, Dr. *Reynolds* propoſed that the jugular vein ſhould be opened. The good effects were almoſt inſtantaneous; the patient recovered, and has ſince had many children.

† The late Dr. *Bromfield* informed me of a caſe of puerperal convulſions, for which he had bled the patient

 without

The ſtate of the patient will ſeldom allow of the uſe of emetics; but, when they could be given, and have produced their effect, they have procured much relief; and the ſame obſervation may be made of purgative medicines. But the truth is, from the moment the convulſions come on, the patients often loſe all power of ſwallowing, even in the intervals, and we are compelled to relinquiſh internal medicines altogether. Yet in ſuch caſes, clyſters, if they can be made to paſs, are uſually given; but, whether they were purgative in the firſt inſtance, or afterwards compoſed with a due quantity of opium, of oil of amber, the fetid gums, or other medicines of that kind, I cannot ſay that I ever ſaw any good produced by them, at leaſt before the birth of the child.

On a ſuppoſition that the remote cauſe of theſe convulſions is in the too great irritability of the conſtitution at large, and the immediate cauſe in the excitement raiſed by ſome new ſtimulant, of the labour, or the like,

without much benefit. In the violence of ſome of her ſtruggles the orifice opened, and a conſiderable quantity of blood was loſt before the accident was diſcovered; but the convulſions from that time ceaſed.

opium

opium in any convenient form has been freely given, and ſometimes with evident advantage; though I have ſeen many caſes in which it had no power to remove, or even to abate, this diſeaſe. Nor has more ſatisfaction been obtained by the various nervous medicines commonly preſcribed; even muſk, often repeated in very large quantities, has done as little ſervice as the reſt.

When the convulſions have continued or increaſed, notwithſtanding the bleeding and the uſe of all the other reaſonable means which could be deviſed, the patient may be put into the warm bath, in which ſhe may remain a conſiderable time if the convulſions are ſuſpended while ſhe is in it. There have been inſtances of women with convulſions who have been freed from them while they were in the bath; and I have heard of one or more caſes of their being actually delivered in the bath, without any ill conſequences, either to the mother or child. When a warm bath could not be procured, or while it was preparing, I have directed flannels wrung out of hot water to be applied over the whole *abdomen*, and, I think, with advantage.

On every principle, of removing the cauſe of the convulſions, of ſubſtituting new modes of irritation different from that which produced the convulſions, of preventing their ill effects, or of abating that exquiſite irritability which renders patients ſubject to them, almoſt every meaſure and method has at one time or other been tried. *Harvey** recommended the irritation of the noſe in a comatoſe patient who was in labour, and gives an inſtance of its ſucceſs. Many years ago I was led by accident to try the effect of ſprinkling, or daſhing cold water in the face; and in ſome caſes the benefit was beyond expectation or belief†. But in other caſes,

* Exercitat de Partu.—Page 554.

† I ſubjoin the following caſe to explain the manner of uſing the cold water. To a patient in convulſions who had been bled, and for whom many other means had been fruitleſsly uſed, I determined to try the effect of cold water. I ſat down by the bed ſide with a large baſon before me, and a bunch of feathers. She had a writhing of the body, and other indications of pain, before the convulſions; and when thoſe came on, I daſhed, with ſome force, the cold water in her face repeatedly, and prevented the convulſion. The effect was aſtoniſhing to the byſtanders, and indeed to myſelf. On the return of the indications

caſes, in which I uſed this method with equal care and aſſiduity, no good whatever was derived from it; nor has the application of ſinapiſms to the feet, or bliſters to various parts of the body, afforded any advantage, except, perhaps, when the convulſions had ceaſed, and the patient remained comatoſe.

When all means have been tried without ſucceſs, and the convulſions remain, with evident and extreme danger of the patient dying every time they return, we ſhall, notwithſtanding, be driven by neceſſity to wait quietly for the termination of the labour in a natural way, hoping ſhe may ſtruggle through; or ſhall be obliged to ſeek further reſources in the delivery of the patient by art.

dications of pain I renewed the uſe of the cold water, and with equal ſucceſs; and proceeded in this manner till the patient was delivered, which ſhe was without any more convulſions, except once when the water was neglected. The child was born living about fifteen hours from the time of my being called, and the patient recovered perfectly.

I was much mortified to find that I had not diſcovered an unfailing method of treating convulſions; further experience convincing me that this often failed. It is however a ſafe remedy; and, though it may not always have ſufficient efficacy to prevent or check convulſions, whoever tries this manner of uſing cold water will ſoon be convinced that it is a moſt powerful ſtimulant.

But this part of our ſubject ſhall be conſidered in the next ſection.

## SECTION VI.

### ON THE DELIVERY BY ART.

If it be neceſſary to make diſtinctions as to the time when convulſions come on, with regard to the medicinal treatment, it is infinitely more ſo as to the delivery of the patient by art. We will therefore conſider,

1. Whether delivery by art be proper or juſtifiable in the beginning of a labour attended with convulſions.

Women ſometimes fall into convulſions before there is any diſcoverable tendency to labour, when there is not the ſmalleſt degree of dilatation or relaxation of the *os uteri*, and when there is no way of judging that it will be labour, except from the peculiarity of the convulſions, which may be readily diſtinguiſhed from thoſe proceeding from any other cauſe. In ſome caſes alſo, after a long continuance of the convulſions, the *os uteri* has remained cloſed, and then it has been preſumed that they were not, properly ſpeaking, puerperal. Yet, after

a long delay, it generally happens that the dilatation both of the internal and external parts begins, and proceeds very rapidly; ſo that, in a ſhort ſpace of time, from no degree of dilatation, the *os uteri* becomes completely dilated, when all hopes of delivery had been laid aſide, and the very exiſtence of the labour had been denied.*

Now whether it be proper and reaſonable that attempts ſhould be made to deliver a woman with the *os uteri* in this ſtate, and under ſuch circumſtances in general, muſt appear very dubious to thoſe who conſider how much would then be required to be done by art. But, if we reflect upon the event of the greater number of caſes of women who have been delivered by art, under theſe, and far more favourable circumſtances, the greater part of whom died, their death being apparently haſtened by the operation, however carefully it might have been performed, we ſhall be deterred from propoſing it, and, I think, be juſtified in forming this general rule

* In a well known caſe of this kind, the midwife, preſuming that it would not be labour, left the patient, who was found dead in the morning, with her child alſo dead lying in the bed.

of

of practice, ſubject to ſome exceptions, that women, who fall into convulſions in the beginning of labour, ought not then to be delivered by art.

I preſume that, with all the aſſiſtance which art enables us to give, or if the labour be reſigned to Nature without interpoſition on our part, patients will ſometimes die in a deplorable manner. I alſo know that, if the patient ſhould die when no attempts were made to deliver, that the omiſſion is always regretted; or, if ſhe ſhould be delivered by art and die, that the operation is lamented. Yet there muſt be a rule of conduct to be preferably followed, and with few exceptions; and theſe are to be made not according to the timidity or boldneſs of the perſon under whoſe care the patient may be, nor according to the hurry or tenderneſs of friends; but according to a judgment formed by a ſenſe of duty, and maturely weighing all that the knowledge of a preſent caſe, or the experience of others, has enabled us to collect*.

2. Though

* Dr. *Roſs*, who, forty years ago, was one of the phyſicians of St. *George's Hoſpital*, was the firſt perſon who had courage to declare his doubt of the propriety of ſpeedy delivery in all caſes of puerperal convulſions. The obſervation

2. Though convulſions often happen in the beginning of a labour, and continue to its termination, the firſt ſtage is, in ſome caſes, paſſed over without any unuſual diſturbance or irregularity, and they come on in the ſecond ſtage of the labour when they were not expected. The propriety of delivering by art is then to be determined on other grounds than in the preceding ſtatement. For, if it ſhould be thought neceſſary to deliver by art, this may frequently be done without any peculiar force upon the parts concerned, as the *os uteri* will then either be dilated with the membranes, whole or lately broken, and the child may be turned without difficulty, and ſafely extracted by the feet; or the head will have deſcended ſo low into the *pelvis* as to allow of the uſe of the *forceps* or *vectis*; or things may be ſo unhappily circumſtanced as to leave no other option of the mode of delivery, but we may be compelled to leſſen the head of the child. Whichſoever of theſe methods may be put in practice, the rules be-

tion on which theſe doubts were founded was merely practical, and the event of very many caſes have ſince confirmed the juſtice of his obſervation, both with reſpect to mothers and children.

fore given will be ſufficient guides for our conduct. But, from a review of what has paſſed in my own practice, I feel it neceſſary to caution the operator againſt a forwardneſs to ſacrifice the regard due to the child in caſes of convulſions, as many of theſe, with very unfavourable appearances, have terminated happily; and againſt hurry in any operation, as he would thereby leſſen his chance of ſaving the child, and probably with diſadvantage to the mother: and no good can reſult to ſociety, or reputation accrue to the profeſſion from a practice by which neither of their lives are preſerved. Should the convulſions continue after the birth of the child, the methods before tried muſt be continued, or new ones adopted, as the ſtate of the caſe may then require or allow; and under theſe circumſtances it will often be found preferable to ſatisfy ourſelves with giving time, proceeding gently and circumſpectly with general care, rather than to uſe inceſſantly the more active means which have ſometimes been recommended.

With reſpect to thoſe convulſions which firſt appear after the birth of the child, the exigence of the caſe muſt govern the treatment.

ment. There is in theſe an appearance of inſtant danger beyond what is found in convulſions before delivery, frightful as they are; and they ſeldom admit of any other conſideration than that of ſupporting the patient by cordials and ſtimulating medicines, when ſhe can ſwallow; or the application of ſuch means as are in common uſe for reſtoring thoſe who are faint, or in fits of any other kind; the principal and moſt efficacious of which is, to daſh repeatedly cold water in the face, in the manner before deſcribed. If women eſcape the firſt fit there is a great chance of their recovery; but, ſhould they remain comatoſe, or whatever their ſtate may be, the particular ſymptoms are to be conſidered; and, from all that has been ſaid upon this ſubject at large, we ſhall be at no loſs to diſcover what may be applicable in any individual caſe.

# ON COMPLEX LABOURS.

## ORDER FOURTH.

### ON LABOURS IN WHICH THERE IS A DESCENT OF THE FUNIS UMBILICALIS BEFORE ANY PART OF THE CHILD.

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### SECTION I.

THE *funis umbilicalis* may be eaſily diſtinguiſhed from any part of the child by its pulſation when the child is living, and by its form and continuation, whether the child be living or dead.

Some incident is generally aſſigned as the cauſe of the deſcent of the *funis*; but the rupture of the membranes, with a rapid diſcharge of the waters of the *ovum*, eſpecially if they be exceſſive in quantity, has been conſidered as the moſt uſual cauſe. This circumſtance

circumſtance may ſometimes occaſion the deſcent of the *funis*, but far leſs frequently than has been imagined. For, before the rupture of the membranes, the *funis* may frequently be diſtinguiſhed through them, lying before the head, or preſenting part of the child; ſo that, whenever the membranes break, whatever might be the quantity of water, or the manner of their diſcharge, it would be impoſſible but that the *funis* muſt be the part which firſt deſcends. For this, with many other reaſons, ſo many cautions have been given to avoid breaking the membranes; becauſe, though the *funis* were thus ſituated, the child would not be in danger before the membranes were broken. It has alſo been obſerved, that the deſcent of the *funis* has happened to the ſame woman in ſeveral ſucceſſive labours; ſo that, from the uncommon length of the *funis*, or from ſome other peculiar circumſtance, ſome women ſeem to be particularly liable to this accident.

The deſcent of the *funis* makes little or no difference with regard to the progreſs or event of a labour, as far as the mother is concerned. The danger thence ariſing is wholly

wholly confined to the child. All our attention, and every meaſure we purſue, muſt then relate to the prevention of this danger, which can only ariſe from the compreſſion of the *funis*, and the conſequent interruption or ſuppreſſion of the circulation of the blood between the *placenta* and child.

All the aſſiſtance which art has afforded for this purpoſe has led to two points of practice; firſt, in directing us to return the deſcended *funis* beyond the head, or preſenting part of the child, whatever that may be, in drawing it to the ſides where it might be out of the way of compreſſion; and, if theſe were impracticable, to favour the continuance of the circulation by preventing its expoſure to the influence of the open air. Secondly, by paſſing the hand into the *uterus*, turning and delivering the child by the feet; by which the labour was accelerated and the danger of the compreſſion of the *funis* avoided.

When the *funis* has deſcended, the ſtate of the child may be preciſely determined by the *funis* itſelf. If there be a pulſation in it, the child is certainly living, or though the pulſation may ceaſe during the continuance of a pain and return in the intervals; but, if there

there be no pulſation to be perceived in it, the child, we may be aſſured, is already dead. When the child is dead all the efforts of art muſt be uſeleſs to it, and might be injurious to the mother; we muſt therefore be ſatisfied with permitting the labour to proceed as if the *funis* had not deſcended. It is only when the child is living, which, as we before obſerved, will be proved by the pulſation of the *funis*, that any interpoſition can either be required or of ſervice; yet it is remarkable that writers on this ſubject have inſtituted their directions in general terms, without regard to the ſtate of the child, whether living or dead. It is alſo to be obſerved, that the ſame directions have been given under all the various circumſtances in which the mother may be, though theſe are ſometimes ſuch as to make it impoſſible for them to be followed, without inducing ſome danger to the mother, or with any proſpect of advantage to the child; but we ſhall underſtand this ſubject better by conſidering it in the following manner.

## SECTION II.

### ON THE DESCENT OF THE FUNIS WHEN THE OS UTERI IS BUT LITTLE DILATED.

SHOULD the membranes break in the beginning of labour, more eſpecially if it be the firſt, when the *os uteri* is but little dilated, and the *funis* deſcend before the preſenting part of the child, this would probably periſh long before the *os uteri* became dilated, or acquired ſuch a ſtate of dilatability as to allow of the ſafe introduction of the hand, if we were diſpoſed to turn the child; and before we had an opportunity of putting in practice any of the methods for replacing the *funis*. With this ſtatement of the ſituation of the mother, it appears to be moſt eligible, and, I believe, it is generally conſonant to the preſent practice, to ſubmit quietly to the natural event of the caſe, than by ill-timed and violent attempts to deliver the patient by art, with very little hope of ſaving the child, and with no ſmall danger to the mother.

## SECTION III.

### WHEN THE OS UTERI IS FULLY DILATED.

THE *os uteri* is underſtood to be completely or ſufficiently dilated when it will allow of the introduction of the hand without much force. When the membranes break in the advanced ſtate of a labour, ſhould the *funis* deſcend before the child, it will even then be neceſſary to conſider the ſtate of the child before we determine on the meaſures we might find it ſafe and think it reaſonable to purſue. If the child ſhould be dead, we then certainly ought to reſign the labour to the natural efforts without any interpoſition. But, if the child be living, and ſo far advanced as to give us hope of a ſpeedy delivery, or if the preſenting part of the child remain high up in the *pelvis*; eſpecially if the pains have been ſlow and feeble, it will generally be better to paſs the hand into the *uterus*, to turn and deliver the child

by the feet; uſing, at the ſame time, the precaution of carrying up the deſcended *funis*, that it may be out of the way of compreſſion. But if the head ſhould be ſo far advanced in the *pelvis* as, in any conſpicuous degree, to render the turning of the child unſafe to the mother, it may be proper to uſe our endeavours to preſerve the child by other means, ſuch as by replacing the *funis*, or by accelerating the labour.

For the firſt we have been directed to raiſe the deſcended *funis* beyond the preſenting part of the child, in the abſence of a pain, as far as we can reach; retaining it there when the pains come on, till it ſhall abide above the preſenting part of the child, when we might preſume it was in ſafety. But this method is, on trial, ſeldom or never found to ſucceed, for the *funis* is uſually forced down again on the return of the pains; though the ſucceſs of theſe attempts will very much depend upon the quantity of *funis* deſcended, or upon its being in a ſingle fold, or in ſeveral convolutions, and whether it be on the fore part or ſides of the

*pelvis*,

*pelvis*, where it can be more commodiouſly managed.

The late Dr. *Mackenſie*, than whom I have not known a man more intelligent in converſation, or more excellent in practice, informed me of another method which he had tried. Inſtead of attempting to replace the deſcended *funis* in the common way, he brought down as much more of it as would come with eaſe, and then incloſed the whole maſs in a ſmall bag made of ſoft leather, gently drawn together with a ſtring, like the mouth of a purſe. The whole of the deſcended *funis*, incloſed in this bag, was conveniently returned, and remained beyond the head of the child till this was expelled; and, the bag containing the *funis* having eſcaped compreſſion, the child was born living. But he very ingenuouſly told me, that he had made ſeveral other trials in the ſame manner without ſucceſs.

Many years ago Mr. *Croft* alſo informed me of a method which he had ſucceſsfully uſed in theſe caſes. When he had in vain attempted to replace the *funis* in the common way, he carried up the deſcended part beyond

yond the head, till he met with a limb of the child, ſuppoſe the leg or arm. On this he ſuſpended the *funis*, and then, withdrawing his hand, ſuffered the labour to proceed in a natural way. There may be much of accident in the ſucceſs of theſe different methods, but I ſhould believe, whenever it may be thought neceſſary to introduce the hand into the *uterus*, that it would be found more expedient to complete the buſineſs by turning the child and delivering by the feet.

With reſpect to the acceleration of the labour, the means to be uſed muſt depend upon various circumſtances, which we will conſider in the next ſection.

## SECTION IV.

1. It is to be obſerved that every child is not born dead, though the *funis* had deſcended, and no means were uſed to free

it from compreſſion; but it is evidently in great jeopardy. The danger depends upon two circumſtances; the time which may paſs when the *funis* is compreſſed before the expulſion of the child, and the degree of compreſſion made upon it, in conſequence either of the ſmallneſs of the *pelvis* in proportion to the head of the child, or upon the reſiſtance of the ſoft parts. The firſt is beyond the power of art to remedy, and the ſecond will depend upon the ſtate of the parts, whether it be a firſt child, or whether the patient may have had one or many children. If the *funis* ſhould have deſcended with a firſt child, in general, the ſlower the labour proceeds, the leſs will be the hazard of the compreſſion; but, unfortunately, the children thus circumſtanced will commonly periſh, though ſometimes they eſcape; and I have been mortified, in ſome inſtances, with an aſſurance that a very few minutes delay in the expulſion of the child has been the cauſe of the miſchief. When the *funis* deſcends in thoſe women who have had many children, there is little reſiſtance made by the ſoft parts; and, by exciting

exciting the pains to act with more vigour, or by encouraging the patient to exert her efforts more ſtrenuouſly towards the concluſion, the child will be ſooner expelled, and its life be preſerved. But no attempts to ſave the child are to be practiſed but ſuch as are conſiſtent with the ſafety of the mother.

2. When the head of the child preſents, and has advanced far into the *pelvis*, if the pains are ſlow and ineffectual, and the child living, it may be conſidered whether, without hazard to the mother, we may not apply the *forceps* or *vectis*; and, by extracting the head ſooner than there was reaſon to think it would be expelled by the natural pains, preſerve the child. With regard to turning the child, and delivering by the feet in theſe caſes, the operation can only be performed before the head has deſcended far into the *pelvis*; though in ſome inſtances I have gone beyond the common rules of the art, and have ſucceeded in ſaving the child.

3. When there is a deſcent of the *funis*, with a preternatural preſentation of the child, our

our conduct muſt have regard to both theſe circumſtances.

Should the breech preſent, the caſe will very much reſemble the preſentation of the head; that is, the ſame methods for replacing the *funis* may be tried, and with rather a better chance of ſucceſs. If theſe fail, inſtead of conſidering the labour as one of thoſe which is to be reſigned to the natural efforts, it may be expedient at a proper time to bring down one or both of the inferior extremities, taking care that the *funis* be not entangled between the legs of the infant; and there are few caſes in which we may not conduce to the preſervation of the infant, by proceeding in this manner.

Should the arm of the child preſent, and ſuch preſentation be complicated with a deſcent of the *funis*, very little difference of conduct will be required; becauſe, for the firſt reaſon, we ſhould determine to turn the child, and deliver by the feet; and the additional circumſtance of the deſcended *funis* can require nothing more to be done. The general rules already given for

the uſe of the *forceps* and *vectis*, and for the management of preternatural labours, make it unneceſſary to enlarge on this part of our ſubject in this place.

FINIS.